BC Student Outcomes

APPSO · BGS · DACSO · DEVSO

2011 Apprenticeship Student Outcomes Survey

REPORT OF FINDINGS

BRITISH COLUMBIA

ita
industry training authority

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Acknowledgements

The Apprenticeship Student Outcomes (APPSO) Survey is one of four annual surveys that make up the BC Student Outcomes project. The APPSO Survey targets former apprenticeship students who have completed the final level of their technical training; the Diploma, Associate Degree, and Certificate Student Outcomes (DACSO) Survey collects information from former students from diploma, associate degree, and certificate programs; the Developmental Student Outcomes (DEVSO) Survey focuses on former students who took Adult Basic Education and English as a Second Language programs; and the Baccalaureate Graduates Survey (BGS) is for graduates from all public degree-granting institutions.

The BC Student Outcomes surveys are conducted with funding from the Province of British Columbia and the participating British Columbia post-secondary institutions. Additional funding for the APPSO Survey is provided by the Industry Training Authority (ITA) and for the DEVSO Survey by Citizenship and Immigration Canada, through the Ministry of Jobs, Tourism and Innovation.

The British Columbia Student Outcomes Research Forum (Forum) oversees all aspects of the project, from data collection to the reporting of survey results. The Forum represents a longstanding partnership among the ministry responsible for post-secondary education, participating post-secondary institutions, and system-wide organizations, such as the Senior Academic Administrators' Forum, the Council of Senior Student Affairs Leaders, the BC Registrars' Association, and the BC Council on Admissions and Transfer.

BC Stats acts as steward of the APPSO, BGS, DACSO, and DEVSO data and is responsible for providing operational support, day-to-day management, advice, and reports, as directed by the Forum.

Highlights

The 2011 Apprenticeship Student Outcomes (APPSO) Survey targeted former students who completed the final year of their apprenticeship training in a B.C. post-secondary institution between July 1, 2009 and June 30, 2010. From January to April 2011, 3,599 former students from 38 post-secondary or training institutions (14 public and 24 private) completed the survey, by telephone or online. The response rate was 55 percent. The following are highlights from the survey findings.

Former apprenticeship students

- 91 percent of respondents were male; the median age for all respondents was 27
- 29 percent of respondents took pre-apprenticeship training: a trades foundation course or entry-level trades training
- 39 percent had some other post-secondary education; of these former students, 60 percent had achieved a credential
- 66 percent of respondents were in one of five program areas: Welder, Electrician, Carpentry, Culinary Arts, or Plumbing
- 82 percent of respondents took their in-school training in public post-secondary institutions

In-school experiences

- 93 percent of respondents said they were *very satisfied* or *satisfied* with their in-school training
- 17 percent of respondents started their apprenticeship training above Level 1
- 32 percent of those who took pre-apprenticeship training started their apprenticeships above Level 1
- 83 percent of respondents said their apprenticeship training program helped them (*very well* or *well*) to analyse and think critically
- 81 percent said their program helped them (*very well* or *well*) work effectively with others
- 84 percent said the quality of their instruction was *very good* or *good*
- 65 percent said the length of their program was *about right*
- 67 percent said the availability of their technical training courses was *very good* or *good*
- 82 percent of respondents rated the content of their training *very good* or *good* at covering the standards used in their field
- 75 percent of the former apprentices surveyed said they received their British Columbia Certificate of Qualification (C of Q)
- 93 percent reported that their training was *very useful* or *somewhat useful* to them in preparing to write the certification exam

Workplace experiences

- 92 percent of respondents said they were *very satisfied* or *satisfied* with their overall workplace training
- 91 percent said their in-school technical training was *very related* or *somewhat related* to their workplace experience

Employment

- 95 percent of respondents were in the labour force (employed or looking for work)
- 11 percent of those in the labour force were unemployed
- 85 percent of respondents were employed
- 97 percent of employed respondents were working full-time
- 6 percent of employed respondents were self-employed
- 56 percent had done work placements with their current employer
- 78 percent of those who had not done work placements with their current employer took less than one month to find a job
- 91 percent of employed respondents said their employment was *very related* or *somewhat related* to their in-school training
- 94 percent said the knowledge and skills they gained through their training had been *very useful* or *somewhat useful* in performing their job
- $27 was the median hourly wage of respondents who were employed at the time of the survey

Introduction

Trades and industry occupations are vital to B.C.'s economy. Currently, there are more than 100 trades for which apprenticeship training is available in the province, offering career opportunities in a diverse range of occupations. Apprenticeship training is delivered through a system that includes the Industry Training Authority, public post-secondary institutions, private training institutions, and employers. Approximately 80 percent of an apprentice's training is provided on-the-job; the remaining technical training is provided in a classroom or shop setting.

While the length of an apprenticeship can range from one to five years, traditional apprenticeships usually require four years to complete. A successful apprentice is one who completes the technical training and the required work hours and passes examinations to earn a Certificate of Apprenticeship and a "ticket" or Certificate of Qualification, after which he or she receives recognition as a "certified tradesperson."

The ministries of Advanced Education (AVED) and Jobs, Innovation and Tourism (JTI), the Industry Training Authority (ITA), and the institutions that provide technical training share a commitment to expand and improve delivery of apprenticeship training in B.C. Information provided by the annual Apprenticeship Student Outcomes survey is an important part of that process.

About the 2011 Apprenticeship Survey

The 2011 Apprenticeship Student Outcomes (APPSO) Survey is the seventh annual survey of former apprenticeship students. This year, the survey group included former students who completed the final year of their apprenticeship program at a B.C. post-secondary institution between July 1, 2009 and June 30, 2010. The survey was conducted, by telephone and online, from January to April 2011; 6,515 former students were eligible for the survey. There were 3,599 respondents making the response rate 55 percent. The respondents were from 38 post-secondary or training institutions (14 public and 24 private) and had taken 215 apprenticeship programs. (For more information on the survey, see Appendix A: Apprenticeship Survey Methodology.)

To provide insight into the apprenticeship experience, former students were asked to:

- rate aspects of their in-school and workplace training;
- evaluate the usefulness of the knowledge and skills they gained;
- quantify their level of satisfaction with their training; and
- describe their post-training employment and further education.

Data from the APPSO Survey are currently used by AVED and ITA for policy development and to monitor the effectiveness of the post-secondary system. Participating B.C.

post-secondary institutions use information from the annual survey for program and curriculum reviews, for marketing and recruitment, and to assist prospective students with career decisions.

Feedback from former foundation or trades training students is currently collected in the annual Diploma, Associate Degree, and Certificate Student Outcomes (DACSO) Survey, so AVED and the institutions also have access to pertinent and valuable outcomes information for non-apprenticeship and pre-apprentice trades programs.

The 2011 survey included respondents from some programs that were previously surveyed in the DACSO Survey. The ITA now offers apprenticeship completion and certification at different levels for certain programs, and the cohort selection criteria for APPSO were changed to include former students from these programs. In 2011, this change resulted in larger numbers of former cook and welding students. (See Appendix B: Trades Programs Moved from DACSO to APPSO, for a discussion of changes made to the cohort selection criteria for the APPSO survey.)

About this report

This report presents a summary of the findings from the 2011 APPSO survey. In some cases, comparisons are made with the results from previous years' apprenticeship surveys. When the terms "former students" or "former apprentices" are used, they are meant to represent the former apprenticeship students who responded to one of the Apprenticeship Student Outcomes surveys.

The report is organized into the following sections:

- details about the former students and where they took their in-school training;
- their in-school experiences;
- their workplace training experiences; and
- their subsequent labour force participation, employment, and occupations.

The former students who were surveyed had apprenticed in a variety of trades. The trade programs named in this report have been organized according to Classification of Instructional Programs (CIP) coding and then grouped to simplify reporting. To see how these groupings relate to institutions' program names, see Appendix C: Apprenticeship Program Areas and Institutions' Programs.

Respondents have been grouped according to the apprenticeship programs they were enrolled in for their in-school training. For the purposes of this analysis, small program areas have been identified as those with fewer than 35 respondents. (For numbers of respondents and response rates, see Appendix D: Response Rates by Program Area.) The small program areas are not used for comparison purposes in the text; the program comparisons use specific examples from the larger programs only. The appendices, however, show information for all trade program areas.

Former Apprenticeship Students

The 2011 Apprenticeship Student Outcomes Survey incorporated questions about students' previous education, including other trades training and credentials already completed. They were also asked to report their immigration and Aboriginal status. Information on age and gender came from administrative records. The 3,599 former students who were interviewed had completed training in 24 different apprenticeship program areas.[1]

Who were former apprenticeship students?

The typical former apprentice surveyed in 2011 was male, about 27 years old and had trained in one of the construction trades. He may have taken some previous trades training or other post-secondary education before becoming an apprentice.

More than likely, he started his apprenticeship training at Level 1, although if he had taken foundation industry or other pre-apprenticeship training, his chances of starting at a higher level were improved. He probably took his training at a public post-secondary institution.

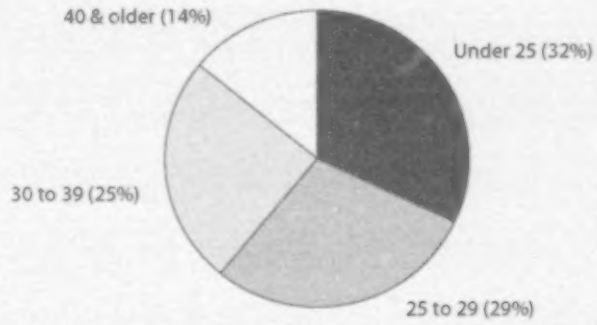
By the time of the survey in 2011, he had completed the requirements to receive his "ticket" as a certified tradesperson and was working at a job related to his apprenticeship training. He was employed full-time and earning about $27 per hour. He either found his job within a month or two or was employed in a workplace where he did an apprenticeship placement.

As a group, the former apprenticeship students who responded to the survey were a little older than many other post-secondary students.[2] At the time of the APPSO survey, the age of respondents ranged from 17 to 69; the median age was 27. The majority (61 percent) of respondents were under 30, although one-quarter were in the age group of 30 to 39.

1 The hundreds of programs offered by institutions have been grouped into 24 program areas for reporting. To see which programs from each institution are included in each program area, refer to Appendix C: Apprenticeship Program Areas and Institutions' Programs.

2 The median age of respondents to the Diploma, Associate Degree, and Certificate Student Outcomes Survey was 25 in 2011.

The majority of respondents were under 30



Note: Age at the time of the survey.

There were some differences in age by apprenticeship program area. Some programs seem to attract older students: the median age for apprentices from Industrial Mechanics & Maintenance was 35, while for those from Culinary Arts, it was 23.

The age of respondents varied by apprenticeship program area

Apprenticeship Program Area	Age
Industrial Mechanics & Maintenance	35
Heating, Air Conditioning, Refrigeration	32
Electrician	29
Plumbing	29
Sheet Metal Worker	29
Exterior & Interior Finishing Trades	28
Joinery	28
Pipefitter & Sprinkler Fitter	28
Carpentry	27
Medium/Heavy Duty Mechanics	27
Machinist	27
Autobody/Collision & Repair	26
Automotive Mechanics	26
Metal Fabricator (Fitter)	26
Welder	24
Culinary Arts	23

Note: Median age at the time of the survey.

As in previous years, most of the APPSO respondents were male; however, the percentage of females responding to the 2011 survey was 9 percent, up from 5 percent in the 2010 survey. The largest number of females, by far, was in the Culinary Arts area, although there were significant numbers in the Welder program area, followed by the Electrician and Carpentry areas. The change in cohort criteria (moving programs from DACSO to APPSO) had an impact, but did not account for all of the increase in female participation.[3]

3 See Appendix B: Trades Programs Moved from DACSO to APPSO, for a discussion of the impact of changes to the APPSO cohort selection criteria.

Almost half of the respondents from Culinary Arts were female

Apprenticeship Program Area	Female Respondents	% of Area Total
Culinary Arts	188	46%
Welder	44	7%
Electrician	29	5%
Carpentry	24	6%
Exterior & Interior Finishing Trades	8	5%
Automotive Mechanics	7	4%
Joinery	5	13%
Plumbing	5	1%

Note: The numbers of females in other apprenticeship program areas are too low to report.

The percentage of respondents who identified themselves as Aboriginal went up in 2011, to 6 percent, compared with 2010, when 4 percent of former apprenticeship students self-identified as Aboriginal.

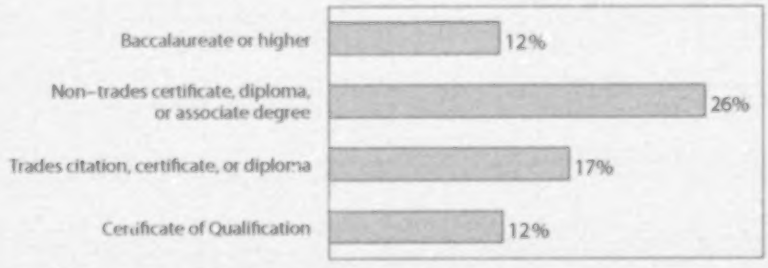
The 2011 APPSO survey included questions about country of origin and citizenship status. Most respondents (90 percent) were born in Canada, and of the 10 percent whose country of origin was not Canada, 68 percent were citizens and 27 percent were permanent residents while they were taking their training.

What previous education did students have?

Before beginning their apprenticeships, 56 percent of respondents had taken pre-apprenticeship training or other post-secondary education—12 percent had taken both types of previous education.

A relatively large portion of those surveyed (39 percent) had taken post-secondary education other than specific pre-apprenticeship training. Of these students, 60 percent had achieved a credential: 17 percent had a trades program citation, certificate, or diploma and 12 percent had received trades certification (Certificate of Qualification) in a different field.

Many respondents had previous credentials



Note: Percentages are based on those who had taken previous post-secondary education. Respondents could have more than one type of post-secondary credential.

Well over one-quarter of respondents (29 percent) had taken pre-apprenticeship training: a trades foundation course or entry-level trades training.[4] The majority (84 percent) of those who had taken pre-apprenticeship training had studied in the same field as their apprenticeship.

In addition, over one-tenth (11 percent) of the former students surveyed said they had taken a high school apprenticeship program. Of those who a taken the high school program, 88 percent (or 308 respondents) received technical credit for their training.

What apprenticeship programs did survey respondents take?

The former apprenticeship students surveyed in 2011 had completed their training in 215 trade programs, which can be grouped into 24 apprenticeship program areas. Almost two-thirds (66 percent) had been in one of the following program areas: Welder, Electrician, Carpentry, Culinary Arts, or Plumbing.

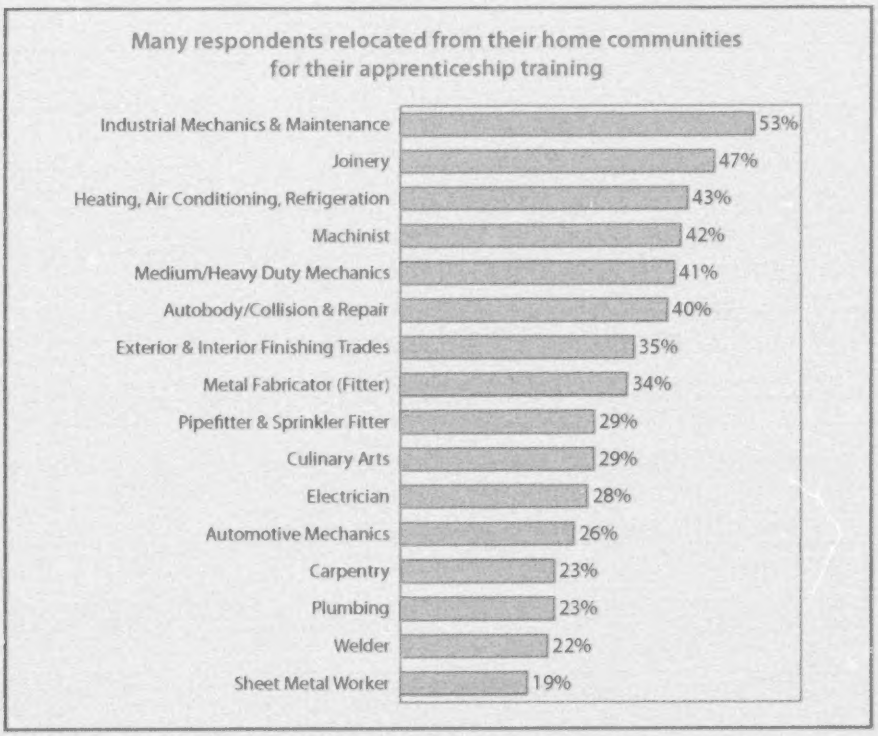
The five largest apprenticeship program areas accounted for two-thirds of respondents

Apprenticeship Program Area	Respondents	% of Total Respondents
Welder	646	18%
Electrician	537	15%
Carpentry	430	12%
Culinary Arts	405	11%
Plumbing	349	10%
Exterior & Interior Finishing Trades	166	5%
Automotive Mechanics	162	5%
Medium/Heavy Duty Mechanics	160	4%
Industrial Mechanics & Maintenance	130	4%
Pipefitter & Sprinkler Fitter	110	3%
Sheet Metal Worker	81	2%
Autobody/Collision & Repair	73	2%
Metal Fabricator (Fitter)	65	2%
Heating, Air Conditioning, Refrigeration	61	2%
Joinery	38	1%
Machinist	38	1%
Field Equipment (Mining/Drilling/Logging)	33	1%
Horticulture & Landscaping	31	1%
Industrial Electronics	23	1%
Marine & Power Sport	17	0%
Lineworker	16	0%
Mortuary Science & Embalming	13	0%
Parts & Warehousing	12	0%
Construction Heavy Equipment	3	0%
Total	**3,599**	**100%**

Overall, 29 percent of respondents said they relocated from their home community to attend their apprenticeship training. That percentage varied by program area: over half of

4 The ITA framework for pre-apprenticeship training refers to Foundation Industry Training, which has replaced the training programs previously known as Entry-Level Trades Training (ELTT).

the former Industrial Mechanics & Maintenance students moved to study, while less than one-fifth of the respondents from Sheet Metal Worker programs relocated.



Did apprentices study in public or private institutions?

In 2011, as in previous years, the majority (82 percent) of the former apprenticeship students who were surveyed had studied in public institutions—18 percent of respondents had taken their training in private institutions. This percentage is consistent with the 2010 finding, which was also 18 percent. In previous years, the percentage of respondents from private institutions climbed steadily from 2005 (11 percent) to 2009 (22 percent) before dropping in 2010.

The majority of respondents had attended public institutions

Public Institutions	Respondents	% of Total Respondents
British Columbia Institute of Technology	819	23%
Okanagan College	362	10%
Camosun College	279	8%
College of New Caledonia	244	7%
Vancouver Community College	226	6%
Thompson Rivers University	220	6%
Vancouver Island University	171	5%
Kwantlen Polytechnic University	167	5%
College of the Rockies	121	3%
North Island College	102	3%
Selkirk College	80	2%
Northern Lights College	72	2%
Northwest Community College	62	2%
University of the Fraser Valley	26	1%
Total	**2951**	**82%**

Close to one-fifth of respondents had attended private institutions

Private Institutions	Respondents	% of Total Respondents
Pacific Vocational College	181	5%
Piping Industry Trade School (PIAB)	71	2%
The Finishing Trades Institute of BC	53	1%
Joint Apprentice Refrigeration Trade School	47	1%
Trowel Trades Training Association	37	1%
R.C.A.B.C. Roofing Institute	35	1%
Electrical Industry Training Institute	31	1%
Northwest Culinary Academy of Vancouver Inc.	27	1%
Sheet Metal Workers Training Centre	26	1%
BC Wall & Ceiling Association	24	1%
Operating Engineers Training Centre	19	1%
Funeral Service Association of BC	13	0%
Piledrivers, Divers, Bridge, Dock, Loc. 2404	13	0%
Salvation Army Cascade Culinary Arts School	13	0%
Christian Labour Association of Canada	9	0%
Discovery Community College	9	0%
Quadrant Marine Institute	8	0%
Broadband Institute (Yulescape)	7	0%
Riverside College	7	0%
Secwepemc Cultural Education Society	6	0%
BC Floor Covering Joint Conference Society	5	0%
VanAsep Training Society	4	0%
Sprott-Shaw Community College	#	0%
Interior Heavy Equipment Operator School Ltd.	#	0%
Total	**648**	**18%**

Note: Low numbers are masked, to preserve confidentiality.

Some apprenticeship programs are offered exclusively by public institutions, others only by private institutions, and some are offered by both private and public institutions. The following table summarizes the delivery of training by program and institution type.

Over half of the apprenticeship program areas had programs that were offered by both public and private institutions

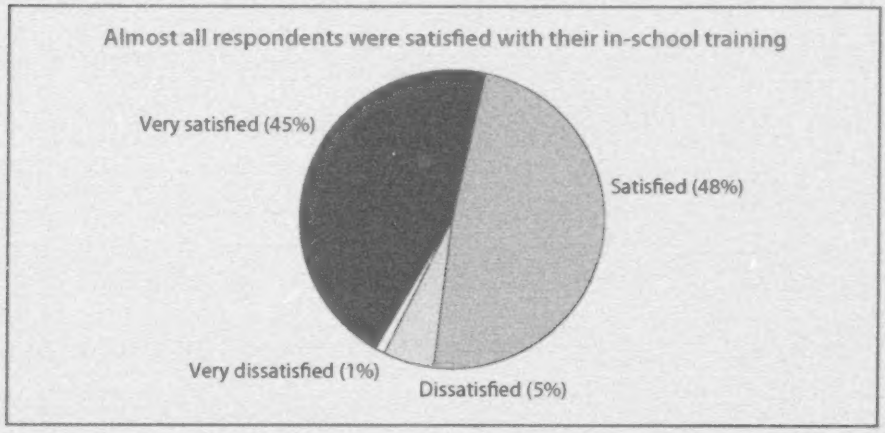
Apprenticeship Program Area	Public	Private
Autobody/Collision & Repair	yes	
Automotive Mechanics	yes	yes
Carpentry	yes	yes
Construction Heavy Equipment		yes
Culinary Arts	yes	yes
Electrician	yes	
Exterior & Interior Finishing Trades	yes	yes
Field Equipment (Mining/Drilling/Logging)	yes	yes
Heating, Air Conditioning, Refrigeration	yes	yes
Horticulture & Landscaping	yes	yes
Industrial Electronics	yes	yes
Industrial Mechanics & Maintenance	yes	
Joinery	yes	
Lineworker		yes
Machinist	yes	
Marine & Power Sport	yes	yes
Medium/Heavy Duty Mechanics	yes	
Metal Fabricator (Fitter)	yes	yes
Mortuary Science & Embalming		yes
Parts & Warehousing	yes	
Pipefitter & Sprinkler Fitter	yes	yes
Plumbing	yes	yes
Sheet Metal Worker	yes	yes
Welder	yes	yes

In-School Experiences

The former apprentices surveyed in 2011 were asked a number of questions about their in-school apprenticeship training. They were asked to state the level at which they began their apprenticeship training and then to provide ratings of the quality of their instruction, the content of their program, and the opportunities they were given to develop skills.

How satisfied were former students with their in-school training?

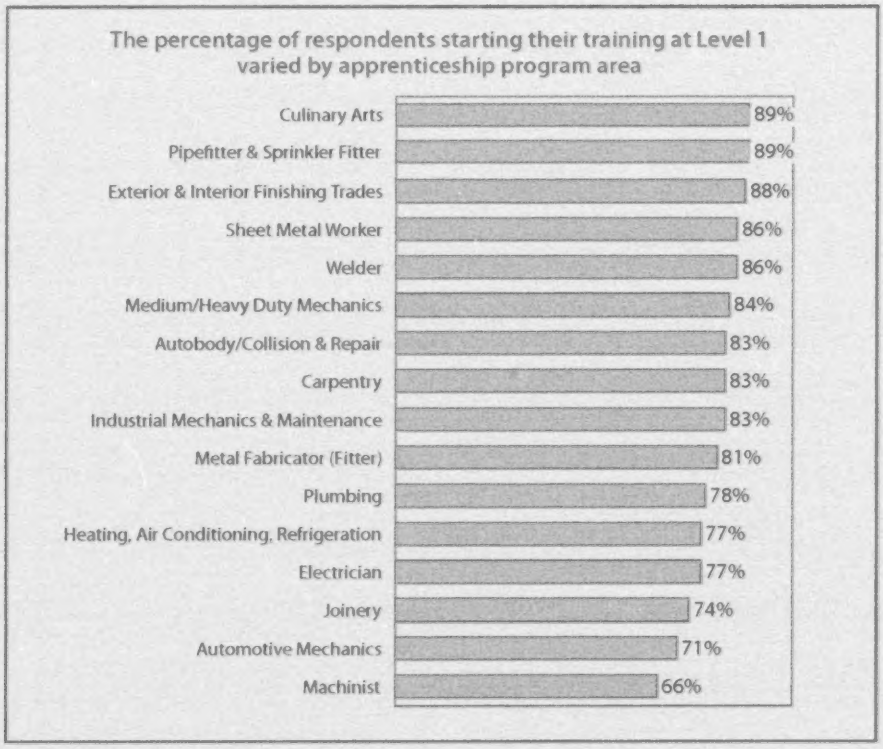
Almost all respondents (93 percent) said they were *very satisfied* or *satisfied* with the in-school education they received as part of their apprenticeship program. Overall satisfaction with in-school training has been consistently high since this survey began in 2005.



Although overall satisfaction with in-school training has not varied over time, it does vary across program areas. Appendix E: Respondents' Satisfaction Ratings by Program Area shows the current year's satisfaction results by program area.

At what level did apprenticeship students begin their in-school training?

Apprentices start their training in one of five possible levels; most of the survey respondents (83 percent) said they started their apprenticeship training at Level 1. There were some differences in the percentage that started at Level 1, by apprenticeship program area. Former Culinary Arts students were the most likely to start at Level 1 (89 percent) and former Machinist students the least likely (66 percent).


The percentage of respondents starting their training at Level 1 varied by apprenticeship program area
Culinary Arts 89%
Pipefitter & Sprinkler Fitter 89%
Exterior & Interior Finishing Trades 88%
Sheet Metal Worker 86%
Welder 86%
Medium/Heavy Duty Mechanics 84%
Autobody/Collision & Repair 83%
Carpentry 83%
Industrial Mechanics & Maintenance 83%
Metal Fabricator (Fitter) 81%
Plumbing 78%
Heating, Air Conditioning, Refrigeration 77%
Electrician 77%
Joinery 74%
Automotive Mechanics 71%
Machinist 66%

Pre-apprenticeship or foundation training was a factor that influenced the starting level for many former students. Those who had taken foundation training were more likely to start above Level 1: 32 percent of those who had taken the training started above Level 1, compared with only 12 percent of those who had not taken the training.

Did in-school training provide opportunities to develop skills?

Former apprenticeship students rated the extent to which their in-school training provided them with opportunities to develop a number of analytical and personal skills. If a particular skill was not relevant to their training, it was marked *not applicable*.

Respondents were asked to indicate how well their apprenticeship programs helped them to develop a variety of important employability skills: for example, *analyse and think critically; read and comprehend material appropriate to their field*; and *work effectively with others*. A large majority of respondents said their apprenticeship programs helped them with these skills—more than 80 percent said *very well* or *well* on a 5-point scale that went from *very well* to *very poorly*.

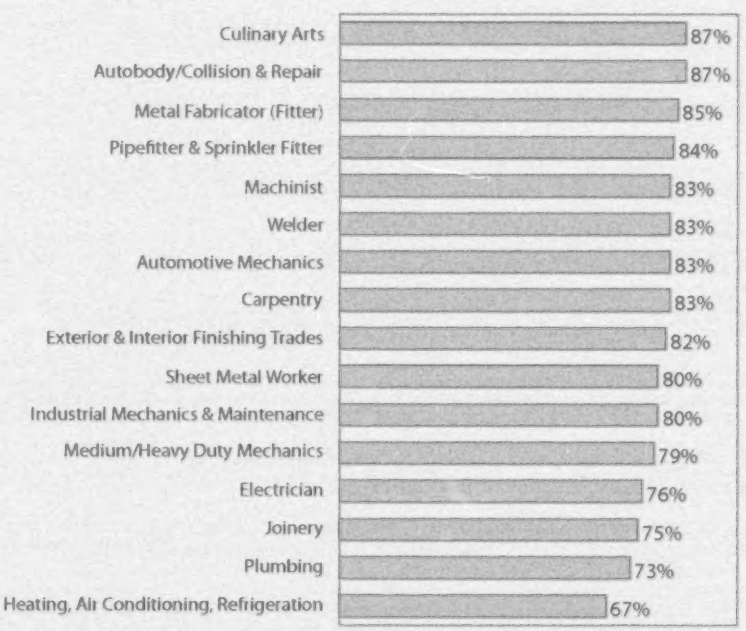
Apprenticeship programs helped students develop skills

Skill	Very well or well	Not applicable
Analyse & think critically	83%	2%
Read & comprehend appropriate material	81%	2%
Work effectively with others	81%	5%
Resolve issues or problems	76%	3%
Write clearly & concisely	74%	22%
Speak effectively	73%	24%

Note: The percentage of *very well* or *well* was calculated excluding those who said *not applicable*.

Respondents from different program areas gave different ratings for their skill development. Using *work effectively with others* as an example, 87 percent of former Culinary Arts students said their program helped them develop the skill, compared with 67 percent of former Heating, Air Conditioning, Refrigeration students who said the same.[5]

Respondents' ratings of how well their training helped them develop the skill to *work effectively with others* varied by program



Note: The percentages are of those who said *very well* or *well*, calculated excluding those who said *not applicable*.

5 For a listing of skills ratings by all program areas, see Appendix F: Ratings of In-School Training by Program Area.

How did students rate the quality of their in-school training?

Former students were asked to rate certain aspects of their in-school training using a 5-point scale: *very good, good, adequate, poor,* or *very poor.* They were instructed to identify any items they thought did not apply to their studies.

Respondents gave particularly high ratings to the *quality of instruction.* They also provided favourable ratings to the *organization of the program* and the *quality of tools and equipment used in the program.* Although most items received very few *not applicable* responses, the *quality of computers and software* were *not applicable* to almost half of all respondents.

Most respondents gave high ratings to the *quality of instruction*

Aspect of Training	Very good or good	Not applicable
Quality of instruction	84%	0%
Organization of program	79%	0%
Quality of tools & equipment	77%	1%
Amount of practical experience	70%	1%
Textbooks & learning materials	67%	0%
Quality of computers & software	59%	47%

Note: The percentages of *very good* or *good* were calculated excluding those who said *not applicable.*

Respondents' ratings of the quality of various aspects of in-school training have not varied much over time, although compared with previous years, the ratings were a little higher in the last two years. Differences between the 2010 and 2011 findings were negligible. However, ratings did vary by apprenticeship program area. For example, 90 percent of

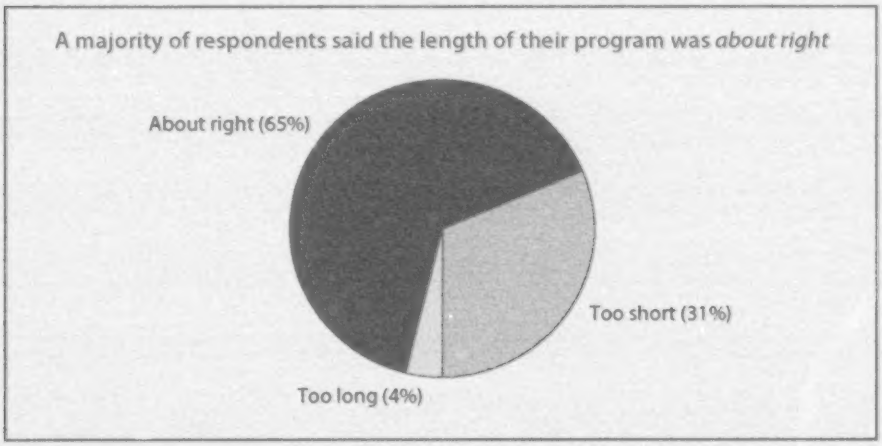
The percentage of respondents who gave high ratings to aspects of their training varied by program area

Apprenticeship Program Area	Instruction	Tools & equipment
Autobody/Collision & Repair	90%	90%
Automotive Mechanics	89%	72%
Carpentry	87%	83%
Culinary Arts	81%	84%
Electrician	83%	66%
Exterior and Interior Finishing Trades	80%	79%
Heating, Air Conditioning, Refrigeration	70%	67%
Industrial Mechanics & Maintenance	87%	70%
Joinery	89%	92%
Machinist	84%	50%
Medium/Heavy Duty Mechanics	77%	60%
Metal Fabricator (Fitter)	83%	82%
Pipefitter & Sprinkler Fitter	82%	72%
Plumbing	83%	76%
Sheet Metal Worker	85%	70%
Welder	89%	90%

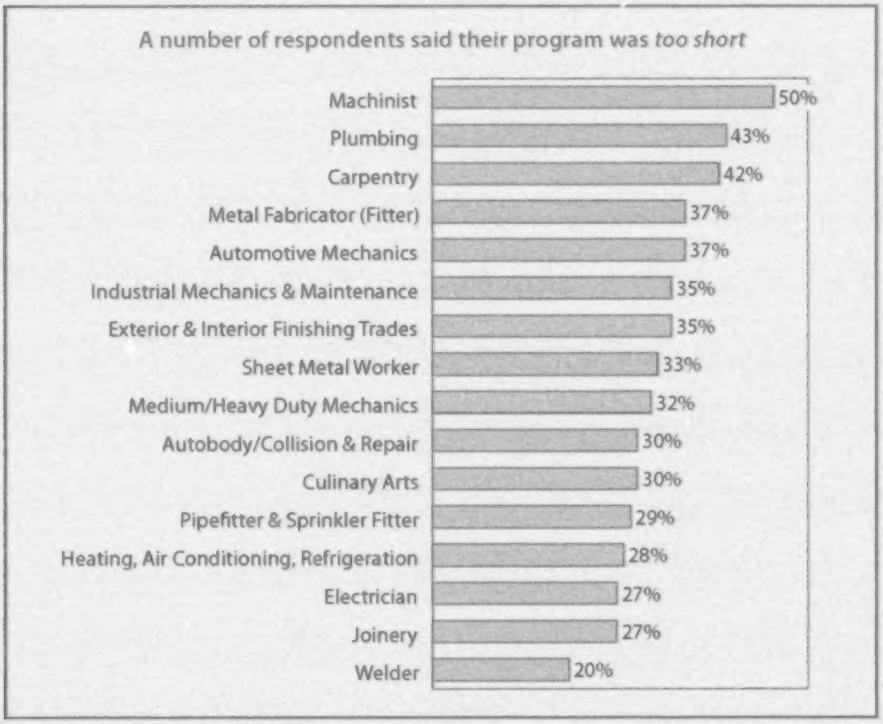
Note: The percentages are of those who said *very good* or *good,* calculated excluding those who said *not applicable.*

former students from Autobody/Collision & Repair programs rated the quality of their instruction *very good* or *good*, while 70 percent of Heating, Air Conditioning, Refrigeration respondents said the same.[6]

Almost two-thirds (65 percent) of the former apprenticeship students surveyed said the length of their program was about right to cover the material taught; almost one-third (31%) thought it was too short and very few said (4%) it was too long.



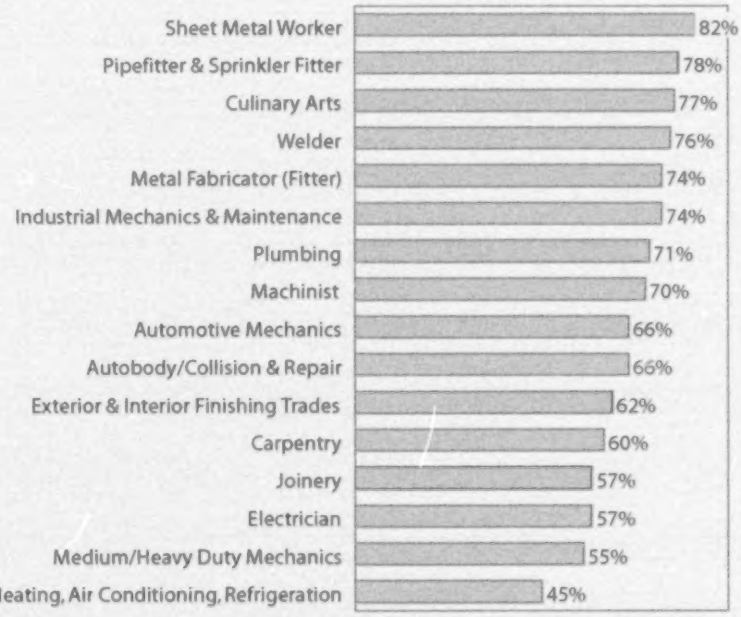
A number of respondents thought their program didn't give them enough time to cover the material adequately. Overall, this percentage was less than one-third of respondents; however, by program it varied from 20 to 50 percent.



6 For a listing of respondents' ratings of aspects of their in-school training for all program areas, see Appendix F: Ratings of In-School Training by Program Area.

The former students surveyed were also asked to rate the availability of their technical training courses throughout their apprenticeship. The scale used was 5-points, from *very good* to *very poor*. Overall, a majority of 67 percent said the *availability of courses* was *very good* or *good*; another 23 percent said it was adequate. By program area, availability varied from 45 percent to 82 percent of respondents who said it was *very good* or *good*.

The percentage of respondents who gave high ratings for *availability of technical training courses* varied by program area



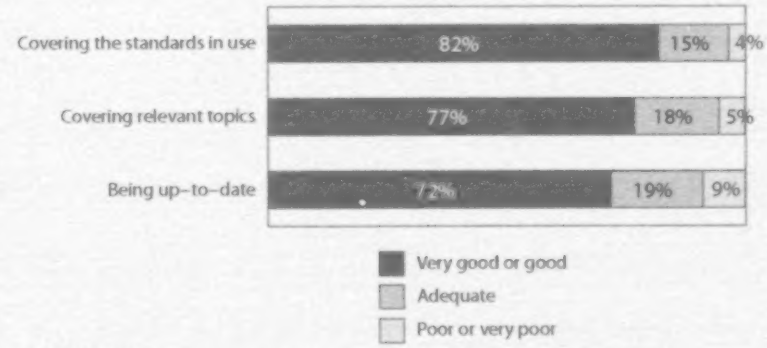
Note: Percentages are of respondents who said *very good* or *good*, calculated excluding those who said *not applicable*.

How did respondents rate the content of their in-school training?

Former apprenticeship students were asked to rate the content of their in-school training in the following areas: *covering the standards being used in their fields*, *covering the topics most relevant to their fields*, and *being up-to-date*. These areas were rated on a 5-point scale, from *very good* to *very poor*. In each case, a majority of respondents gave either a *very good* or *good* rating.

Ratings of the content areas did not vary much over the years the APPSO survey has been collecting data, until 2010, when they went up slightly. The 2011 results are very similar to the ratings given by respondents to last year's survey.

The majority of respondents rated the content of their training *very good* or *good*



Note: Percentages were calculated excluding those who said *not applicable*.

In the 2011 results, ratings varied by program, although in each case, a majority of respondents gave ratings of *very good* or *good*. The respondents from many of the program areas rated the items quite differently: for example, 89 percent of former Joinery students said their training *covered the standards used in their field*, while 58 percent said the *content was up-to-date*. On the other hand, 86 or 87 percent of Welders rated each item *very good* or *good*.

Respondents' ratings of in-school content varied by program area

Apprenticeship Program Area	Up-to-date	Covered relevant topics	Covered standards used
Autobody/Collision & Repair	85%	95%	92%
Automotive Mechanics	67%	84%	85%
Carpentry	70%	77%	84%
Culinary Arts	76%	83%	83%
Electrician	61%	69%	81%
Exterior & Interior Finishing Trades	70%	72%	77%
Heating, Air Conditioning, Refrigeration	65%	72%	73%
Industrial Mechanics & Maintenance	72%	78%	83%
Joinery	58%	79%	89%
Machinist	61%	55%	74%
Medium/Heavy Duty Mechanics	50%	62%	67%
Metal Fabricator (Fitter)	69%	71%	82%
Pipefitter & Sprinkler Fitter	84%	80%	90%
Plumbing	76%	73%	80%
Sheet Metal Worker	63%	67%	70%
Welder	86%	86%	87%

Note: Percentages are of respondents who said *very good* or *good*, calculated excluding those who said *not applicable*.

How could in-school training be improved?

The former students surveyed were asked how the training in their programs could be improved. Of the 93 percent who gave an answer, 26 percent said their program was fine—it needed no improvement. Many of the respondents who provided suggestions for improvement commented on more than one subject.

Probably the most frequently mentioned topic was that of the length of the program; at least 30 percent of the suggestions for improvement included a reference to program length. Most of those who commented on program length said that the program should be longer, although a handful of respondents said their program was too long. These findings are consistent with the results of the specific question on program length, where 31 percent of respondents said their program was too short.

There was too much material to cover in too little time.

Make each of the semesters a week or two longer.

There should be more in-class lectures to prepare for the IP exam.

To improve the program, there needs to be more time learning stuff that you are going to use out in the field.

The length of the course is barely adequate to cover all the materials. Another two weeks would have done the course some good.

At least 24 percent of the comments included mention of teachers or teaching. There were a number of respondents who noted that they had had very good or excellent teachers, but there were many more who had general or specific complaints about the instruction they received. Lack of experienced teachers was a recurring theme, while many respondents wanted more consistency in teaching and more one-on-one time with teachers.

They should have better and more experienced teachers.

The instructor should be a bit more available to students.

Instructors could be better chosen with more experience in the trade and more teaching skills.

Probably more attention from the teachers as well as more accessibility to the teachers.

Not so many different teachers teaching at different times. More consistent teaching.

At least 15 percent of the comments focussed on the need for more practical or hands-on training.

More lab time, more practical experience.

Focus on more practical, in-the-field training, and less on the theoretical side that doesn't pertain to what you see in the field.

There needs to be more hands-on time with the tools.

More hands-on work. Stuff looks different on paper than it does in real life.

Use more modern teaching methods and more hands-on training. Make it more like the real life situations.

Approximately 11 percent of the responses referred to equipment and technology, including computers. Most of the comments were about the equipment and technology being

out-of-date; although some respondents thought that having a greater variety or better equipment would improve the program.

> *Provide better, more up-to-date equipment and tools.*
>
> *They need more variety of equipment in the shop.*
>
> *They need to update their tools and equipment in the program.*
>
> *Provide a little more technologically advanced, up-to-date computerized material....*
>
> *The program should be more up-to-date in the new technologies such as use of computers....*

In addition to suggestions to update technology, many comments (approximately 8 percent) were that the textbooks and course materials were out-of-date or inadequate.

> *The course could be improved through the use of learning materials that are more up-to-date.*
>
> *The curriculum needs to be updated and has been the same for too many years.*
>
> *The textbooks are out-of-date and have to be supplemented with revised additions.*
>
> *The textbooks had too many spelling errors and had outdated and irrelevant material.*
>
> *... the information was not well organized and there was too much duplication of material from year to year.*

About 10 percent of those who responded thought that they could have been better prepared for the certification examination. Many noted they thought there should have been a better match between what they learned in the classroom and what was on the exam.

> *There was a lot on the IP exam that had not been covered. The program should make sure to cover everything needed to write the exam.*
>
> *The certification exam should be more related to what is taught in the program.*
>
> *More testing would have helped to prepare for the IP exam.*
>
> *The program should cover the material that is actually on the IP exam.*

A number of respondents (about 4 percent of those who commented) noted that their class size was too large or that they had faced unacceptable wait times for their training.

> *There should be more classes so that more people can get into the program, because the waiting lists are very long.*
>
> *Maybe have smaller class sizes as some of the groups were too big.*
>
> *Better accessibility and shorter wait lists. Some of the wait lists were over two years.*
>
> *Class sizes should be smaller so that each student can obtain proper attention from the instructors.*

How many students received qualification or certification?

Three-quarters (75 percent) of the former apprentices surveyed said they received their British Columbia Certificate of Qualification (C of Q)—many with Interprovincial or Red Seal endorsement.[7] To receive certification, apprentices must successfully complete a num-

7 In 2010, 83 percent of respondents said they had received certification—the drop to 75 percent in 2011 cannot be explained by the addition of the cook and welder programs that were previously surveyed in DACSO. Controlling for the addition of those programs still results in a significant drop, from 84 to 78 percent.

ber of work-based training hours, complete or successfully challenge all required levels of technical training, pass examinations, and be recommended for certification by their sponsors (also referred to as employer sign-off).

The results varied by program area; for the larger program areas, the percentages of respondents who received certification ranged from a high of 87 percent of Machinists to a low of 60 percent of respondents from Exterior & Interior Finishing Trades. Appendix G: Qualification or Certification by Program Area shows results for all program areas.

The respondents who said they did not get their certification were asked to give a reason. Half of those who responded said they did not have enough work hours. Other main reasons included not passing the exam or not writing the exam yet.

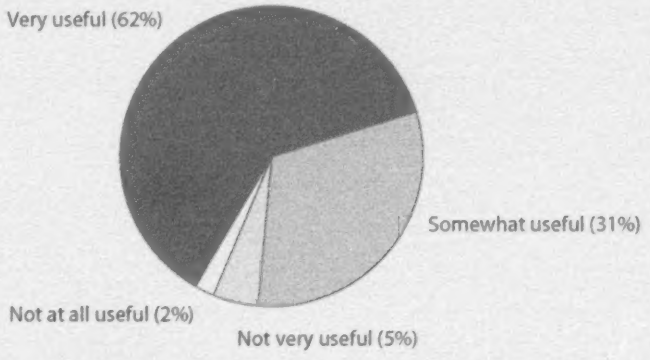
Respondents gave a number of reasons for not getting their Certificate of Qualification

Reason	Percent
Insufficient work hours	50%
Unsuccessful certification exam	19%
Have not written certification exam yet	14%
Employer has not signed off	7%
Changed occupations	3%
Still waiting/Have not received it yet	1%
Haven't submitted hours	1%
Cannot find employment/sponsor	1%
Other reasons	4%

Note: Percentages are based on those who said they did not get their certification (n=846).

All respondents were asked how useful the knowledge and skills they gained from in-school training were in preparing to write their certification examinations. Approximately 5 percent of respondents said the question was *not applicable*, but of those who responded,

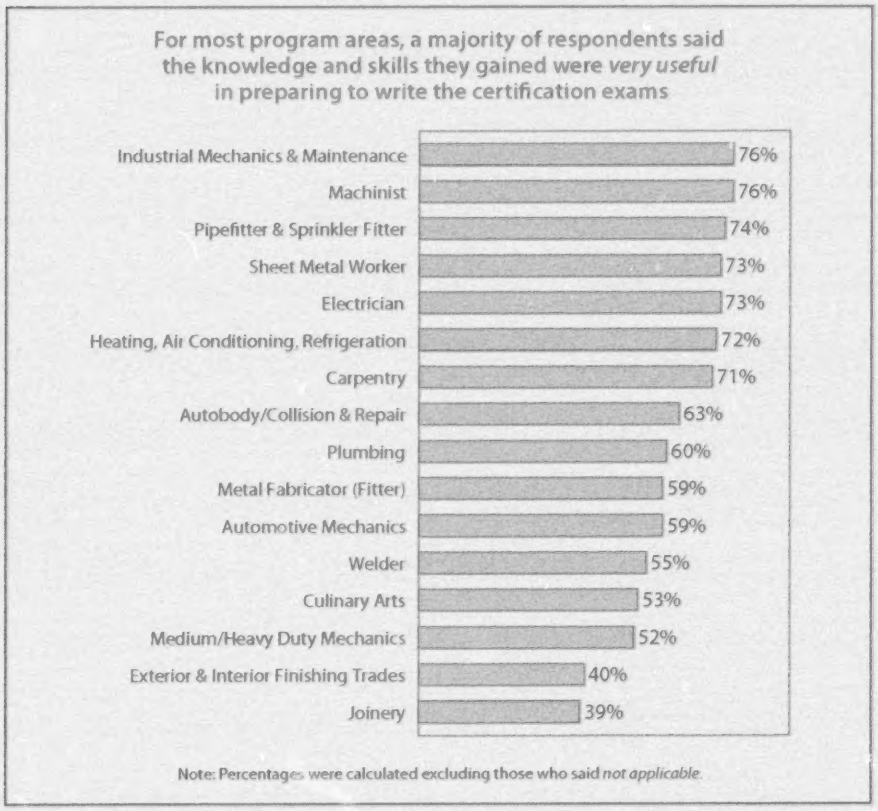
Most respondents said the knowledge and skills they gained in their program were useful in preparing to write the certification exam



Note: Percentages were calculated excluding those who said *not applicable*.

most (93 percent) agreed that what they gained from their training was *very useful* or *somewhat useful* to them in preparing to write the certification exam.

Overall, almost two-thirds (62 percent) of respondents said the knowledge and skills they gained were *very useful* to them. This percentage varied considerably across program areas, from 76 percent of former Industrial Mechanics and Maintenance students to 39 percent of those from Joinery programs.


For most program areas, a majority of respondents said the knowledge and skills they gained were very useful in preparing to write the certification exams
Industrial Mechanics & Maintenance 76%
Machinist 76%
Pipefitter & Sprinkler Fitter 74%
Sheet Metal Worker 73%
Electrician 73%
Heating, Air Conditioning, Refrigeration 72%
Carpentry 71%
Autobody/Collision & Repair 63%
Plumbing 60%
Metal Fabricator (Fitter) 59%
Automotive Mechanics 59%
Welder 55%
Culinary Arts 53%
Medium/Heavy Duty Mechanics 52%
Exterior & Interior Finishing Trades 40%
Joinery 39%
Note: Percentages were calculated excluding those who said not applicable.

Did former apprenticeship students take further training?

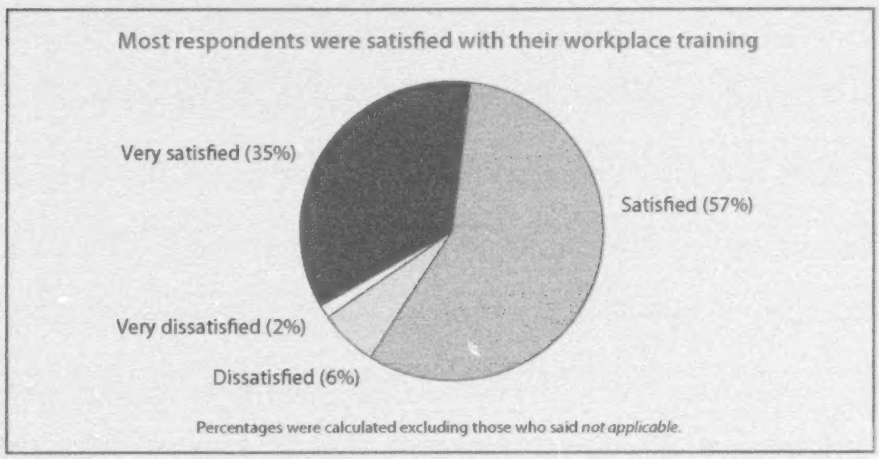
After completing their apprenticeship programs, some of the former students surveyed chose to go on to further education. At the time of the survey (9 to 20 months after students had left their apprenticeship programs), 14 percent of respondents said they were taking or had taken further studies. This percentage is a little higher than last year's (11 percent); however, previous APPSO surveys show percentages of further education ranging from a high of 16 percent in 2006 to 11 percent in 2010.

Workplace Experiences

The 2011 survey included two questions for former students about their on-the-job experiences as apprentices. They were asked to say how related their workplace experience was to their in-school training and to provide a rating of their overall satisfaction with their workplace experience.

How satisfied were former apprentices with their workplace training?

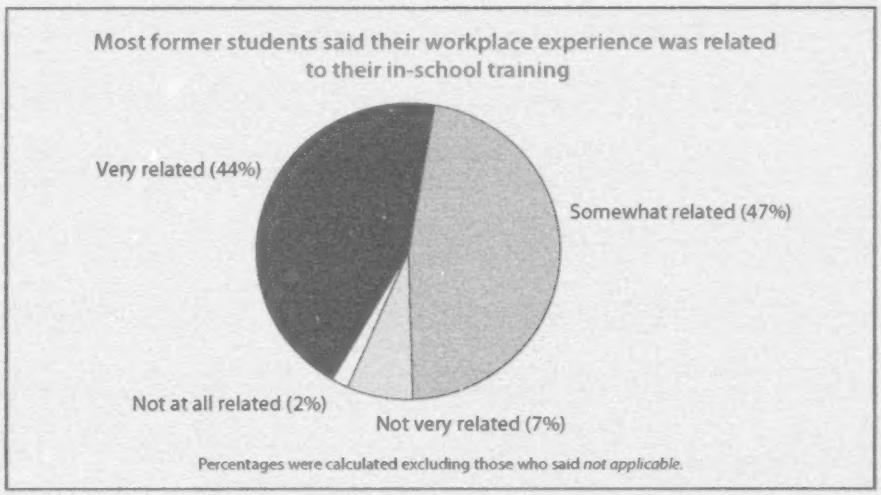
Most survey respondents (92 percent) said they were *very satisfied* or *satisfied* with their overall workplace training experience. This level of satisfaction with on-the-job training is consistent with previous years' satisfaction ratings.


Most respondents were satisfied with their workplace training
Very satisfied (35%)
Satisfied (57%)
Very dissatisfied (2%)
Dissatisfied (6%)
Percentages were calculated excluding those who said *not applicable*.

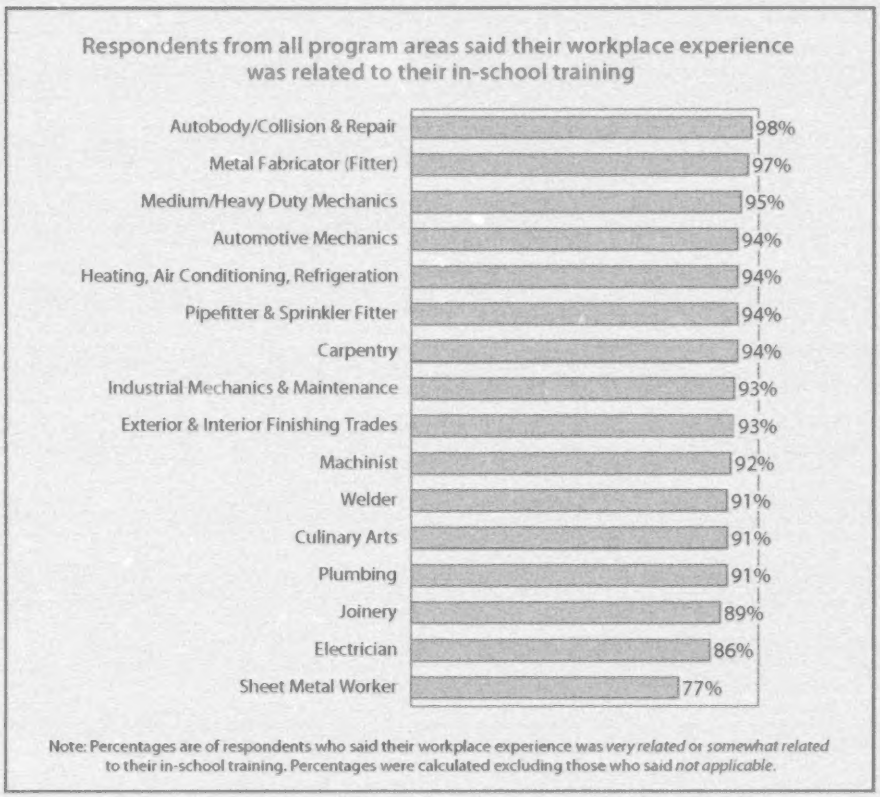
Although overall satisfaction with workplace training has not varied much over time, it did vary across program areas. Appendix E: Respondents' Satisfaction Ratings by Program Area provides the 2011 results by program area.

How related was the workplace experience to in-school training?

Most (91 percent) of the former apprenticeship students surveyed said their in-school technical training was related—*very related* or *somewhat related*—to their workplace experience. Very few said their in-school and workplace training were completely unrelated.


Most former students said their workplace experience was related to their in-school training
Very related (44%)
Somewhat related (47%)
Not at all related (2%)
Not very related (7%)
Percentages were calculated excluding those who said not applicable.

The proportion of respondents who said their in-school training was *very related* or *somewhat related* to their workplace experience was consistently high across all program areas, ranging from 98 percent (Autobody/Collision & Repair) to 77 percent (Sheet Metal Worker).


Respondents from all program areas said their workplace experience was related to their in-school training
Autobody/Collision & Repair 98%
Metal Fabricator (Fitter) 97%
Medium/Heavy Duty Mechanics 95%
Automotive Mechanics 94%
Heating, Air Conditioning, Refrigeration 94%
Pipefitter & Sprinkler Fitter 94%
Carpentry 94%
Industrial Mechanics & Maintenance 93%
Exterior & Interior Finishing Trades 93%
Machinist 92%
Welder 91%
Culinary Arts 91%
Plumbing 91%
Joinery 89%
Electrician 86%
Sheet Metal Worker 77%
Note: Percentages are of respondents who said their workplace experience was very related or somewhat related to their in-school training. Percentages were calculated excluding those who said not applicable.

Employment

Former apprenticeship students were asked a number of questions to determine their labour force status. Employed respondents were asked about their occupation, hours of work, earnings, and the relation of their current employment to their apprenticeship training.

What was the labour force participation of former students?

Almost all (95 percent) of the former students surveyed were in the labour force; that is, employed or looking for work. In comparison, the labour force participation rate (unadjusted) for the B.C. population aged 20 to 54 was 83 percent in March of 2011.[8]

The labour force participation rate was consistently high across all of the larger program areas, with several areas showing 100 percent participation.

The unemployment rate (the number unemployed as a percentage of respondents in the labour force) for respondents was 11 percent—the same as that for the 2010 respondents to the APPSO Survey. The unemployment rate varied significantly by program area.

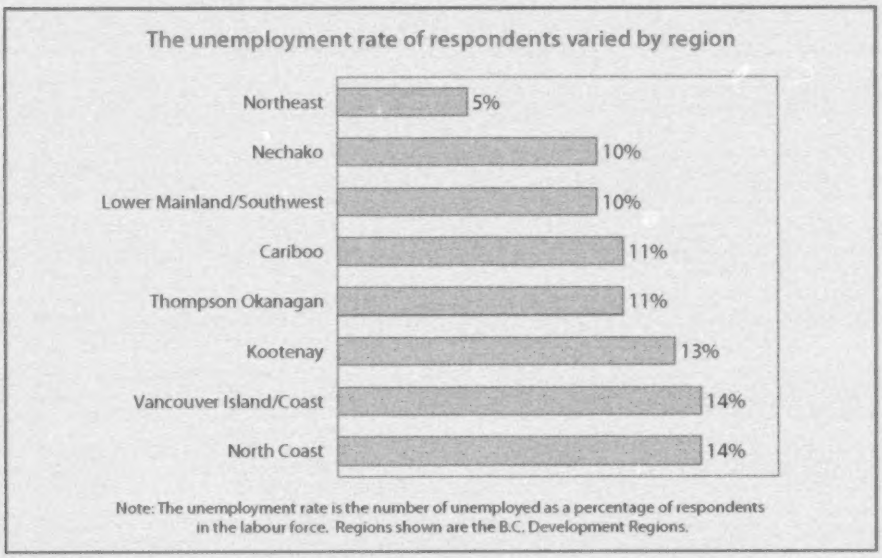
The unemployment and labour force participation rates varied by program area

Apprenticeship Program Area	Unemployment Rate	Labour Force Participation Rate
Heating, Air Conditioning, Refrigeration	2%	100%
Industrial Mechanics & Maintenance	2%	99%
Medium/Heavy Duty Mechanics	3%	100%
Automotive Mechanics	3%	98%
Machinist	5%	100%
Pipefitter & Sprinkler Fitter	6%	95%
Exterior & Interior Finishing Trades	8%	95%
Autobody/Collision & Repair	8%	100%
Metal Fabricator (Fitter)	10%	94%
Sheet Metal Worker	10%	96%
Plumbing	10%	98%
Joinery	11%	97%
Culinary Arts	12%	89%
Electrician	12%	98%
Carpentry	15%	95%
Welder	18%	92%

Note: The unemployment rate is the number of unemployed as a percentage of respondents in the labour force.

8 Source: Statistics Canada, Labour Force Survey, 2011.

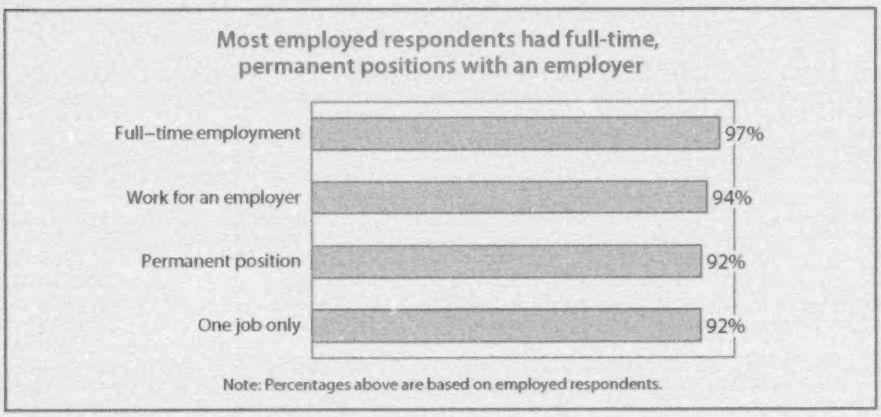
The unemployment rate also varied by region, ranging from a low of 5 percent in the Northeast region to 14 percent in the Vancouver Island/Coast region and the North Coast.[9]



What were former students' employment outcomes?

At the time of the survey, 85 percent of survey respondents were employed at a job or business. In approximately the same time period, March 2011, the employment rate (unadjusted) for the B.C. population aged 20 to 54 was 77 percent.[10]

Most employed respondents had only one job and it was probably a permanent, full-time position rather than a part-time or temporary one. Likewise, most respondents were employed by someone else rather than being self-employed (6 percent were self-employed).



9 The regions are the B.C. Development Regions, described here: http://www.bcstats.gov.bc.ca/StatisticsBySubject/Geography/ReferenceMaps/DRs.aspx.

10 Source: Statistics Canada, Labour Force Survey, 2011.

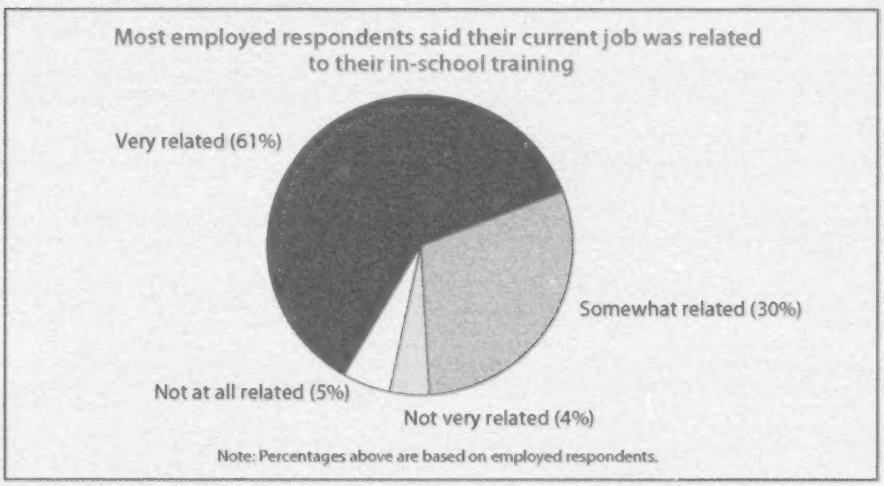
The employed former apprenticeship students were asked if they had done any work placements with their current employer: 56 percent said yes. This percentage is lower than last year's result, which showed 68 percent of respondents were still working with a work placement employer. The addition of former students from cook and welding programs which were previously included in the DACSO survey, accounted for part of this drop, since those respondents were much less likely to have done a work placement with their current employer. However, even when the respondents from the new programs are discounted, the decline remains significant.

The respondents who did not do a work placement with their current employer were asked how long they took to find their employment. A majority of 78 percent took less than one month to find a job; by six months, 96 percent had found employment.

Respondents who did not do any work placements with their current employer were asked to give the main reason. The largest portion (35 percent) said that no job was available. Almost as many (28 percent) cited other or personal reasons, such as the location wasn't convenient, they had problems with their work placement employer, or they just wanted a change. A number of others (20 percent) said they found a better job elsewhere, and a few (7 percent) said they wanted to be self-employed. The remaining respondents (10 percent) said they had no work placements, or their placements were with an institution and ended with the training.[11]

How related were former students' jobs to their in-school training?

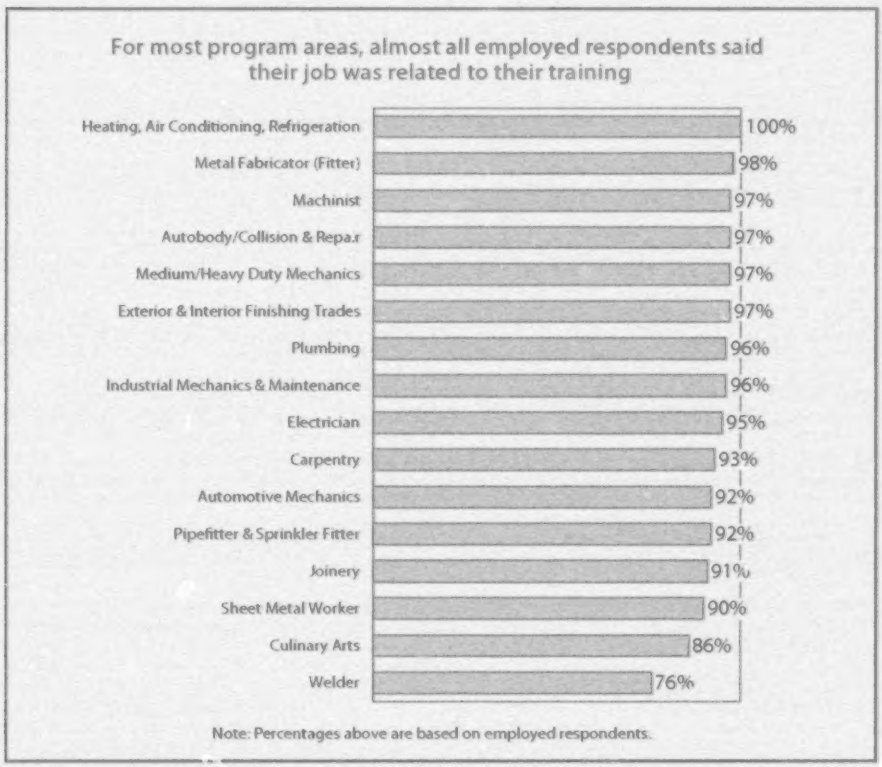
Employed respondents were asked to judge the extent to which their job was related to the in-school training they took. If they had more than one job[12] they were asked to think about their main job; the one at which they worked the most hours. The correlation between respondents' training and their employment is quite high—91 percent of those who answered the question said their employment was *very related* or *somewhat related* to their in-school training.


Most employed respondents said their current job was related to their in-school training
Very related (61%)
Somewhat related (30%)
Not at all related (5%)
Not very related (4%)
Note: Percentages above are based on employed respondents.

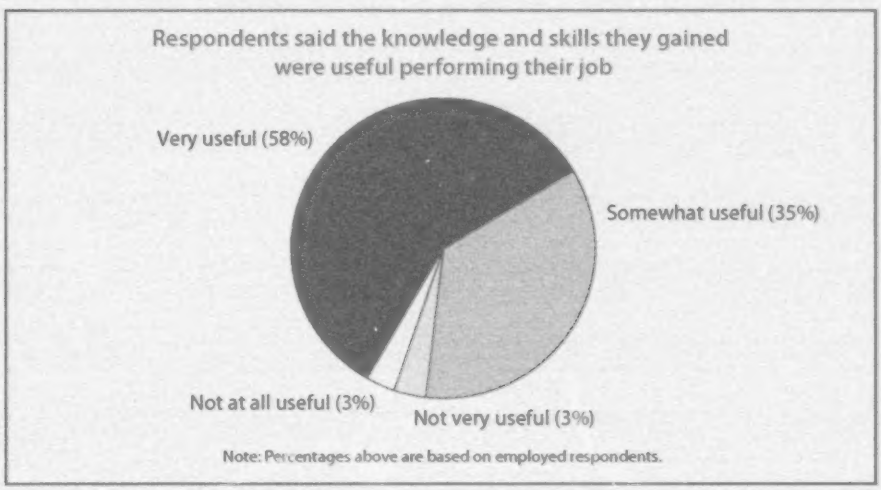
11 Well over half (59 percent) of the respondents who said they had no workplaces or did their placements at an institutions were from programs previously surveyed in DACSO.

12 Barely 7 percent of employed respondents had two jobs, and only 1 percent had three or more jobs.

Across the larger program areas, most employed respondents said their job was related to their training. In the case of respondents from Heating, Air Conditioning, Refrigeration programs, all respondents said their job was *very* or *somewhat related* to their apprenticeship training.


For most program areas, almost all employed respondents said their job was related to their training
Heating, Air Conditioning, Refrigeration 100%
Metal Fabricator (Fitter) 98%
Machinist 97%
Autobody/Collision & Repair 97%
Medium/Heavy Duty Mechanics 97%
Exterior & Interior Finishing Trades 97%
Plumbing 96%
Industrial Mechanics & Maintenance 96%
Electrician 95%
Carpentry 93%
Automotive Mechanics 92%
Pipefitter & Sprinkler Fitter 92%
Joinery 91%
Sheet Metal Worker 90%
Culinary Arts 86%
Welder 76%
Note: Percentages above are based on employed respondents.

To explore the relationship of training to employment in more depth, former students were asked to say how useful the knowledge and skills they gained through their program of studies had been in performing their job. Again, a very large majority said they had been *very* or *somewhat useful*: 58 percent said *very useful* and 35 percent said *somewhat useful*.


Respondents said the knowledge and skills they gained were useful performing their job
Very useful (58%)
Somewhat useful (35%)
Not at all useful (3%)
Not very useful (3%)
Note: Percentages above are based on employed respondents.

The ratings across the larger apprenticeship program areas were consistently high—from 86 to 97 percent of respondents from each area said the knowledge and skills they gained were useful for their employment. (For detailed results by program area see Appendix H: Usefulness of In-School Training when Performing Job, by Program Area.)

What occupations did former apprenticeship students have?

A substantial majority—82 percent—of the employed respondents were working in Trades, Transport, and Equipment Operators and Related Occupations.[13] The remainder of the respondents were spread thinly across all the other occupational categories, although 12 percent were in Sales and Service Occupations.[14]

There is a very good correlation between former students' apprenticeship programs and their subsequent occupations. For example, of the respondents who apprenticed in the program area of Autobody/Collision & Repair, 91 percent were employed as Motor Vehicle Mechanics.[15] (For detailed results see Appendix I: Common Occupations by Program Area.)

What was the wage of respondents employed at the time of the survey?

The employed former apprenticeship students were asked to report their gross salary or wage before deductions. If they had more than one job, they were asked to report the wage from their main job, the one at which they worked the most hours. Respondents could report their wages by whatever time period they wished (hour, day, week, and so on); an *hourly* wage was derived from the information provided and confirmed by the respondent during the interview.

At the time of the survey, the median hourly wage of employed respondents was $27. Until 2010, the median hourly wage among former apprenticeship students had increased steadily since the 2005 survey—wage figures in previous years were: $24 (2005), $25 (2006), $27 (2007), $28 (2008), and $29 (2009 and 2010).[16] The difference between the 2010 and 2011 wage is not statistically significant; however, there is some evidence to suggest that the overall wage is a little lower than it would have been without the addition of the programs that were moved from DACSO.

The hourly wage varies across the different trades occupations. Among the 10 most common occupations for 2011 respondents, the median hourly wage ranges from a high of $33 for Machinery & Transportation Equipment Mechanics to $13 for Chefs & Cooks.

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13 The National Occupational Classification (NOC) system, which is a taxonomy of occupations in the Canadian labour market, was used to assign 4-digit codes to the occupations former students had at the time of the survey. The codes are used to describe occupations and to aggregate them into occupational categories. The grouping of occupations called "Trades, Transport, and Equipment Operators and Related Occupations" is at the 1-digit level. The respondents who had more than one job were asked to describe their main job.

14 The majority of respondents who were employed in Sales and Service Occupations were from Culinary Arts programs.

15 This grouping of occupations is at the 3-digit NOC level.

16 These median wage amounts have not been adjusted for inflation.

Hourly wage varies significantly by occupation

Occupation	Respondents	Hourly wage
Machinery & Transportation Equipment Mechanics	307	$33
Electrical Trades & Telecommunications	419	$30
Contractors & Supervisors, Trades & Related	184	$30
Plumbers, Pipefitters & Gas Fitters	328	$28
Other Construction Trades	53	$28
Metal Forming, Shaping & Erecting	421	$27
Masonry & Plastering Trades	59	$26
Carpenters & Cabinetmakers	290	$25
Motor Vehicle Mechanics	253	$25
Chefs & Cooks	248	$13

Note: The wages above are medians; the occupation groups are at the NOC 3-digit level.
The occupations shown are the top ten, accounting for 84 percent of employed respondents.

Conclusion

Trades and industry occupations are vital to British Columbia's economy, and the provincial bodies responsible for apprenticeship training in B.C. work continuously to improve and expand the delivery of trades training. Their efforts over the last several years have resulted in a significant and steady increase in the numbers of former apprenticeship students who are eligible for the Apprenticeship Student Outcomes (APPSO) Survey every year. The 2011 APPSO survey cohort (those eligible for the survey) was a third larger than that of 2010's and almost twice the size of the 2009 cohort. The number of survey respondents has increased accordingly. Also in 2011, there were more training institutions participating in the survey than ever before—the number of private training institutions has gone up significantly over the years, as has the portion of respondents from those institutions.

Part of the rapid increase in cohort size can be attributed to some changes in the apprenticeship training model. Students training in some areas—especially cook and welder programs—are now able to register as apprentices, complete their training at different levels, and receive certification in much less time than a traditional apprenticeship requires.

The addition of former apprenticeship students from shorter-term cook and welder programs served to increase the proportion of female respondents to the 2011 survey. The number of women participating in most trades is still low; however, half of the respondents who studied Culinary Arts were female. Although former apprenticeship students from the cook and welder programs tend to be younger than traditional apprentices, their inclusion did not have a large impact on the overall age of the respondents. The proportion of respondents in each age group has been consistent over time.

Well over one-quarter of the survey respondents had taken pre-apprenticeship or industry foundation training. This percentage is a little lower than last year's because of the addition of the cook and welder programs. As in previous years, over three-quarters of respondents started their apprenticeship training at Level 1, and two-thirds were in one of five trades, which this year included Welder and Culinary Arts. The other top trades by size were Electrician, Carpentry, and Plumbing.

Almost all of the former apprenticeship students surveyed said they were *very satisfied* or *satisfied* with their in-school training. A similarly high level of satisfaction has been reported in every APPSO survey since 2005. The 2011 respondents also gave positive ratings to many aspects of their in-school training. In particular, they said their programs helped them develop skills: such as, the abilities to analyse and think critically, read and comprehend material appropriate to their field, and work effectively with others. These are skills that were important for their apprenticeship and are essential for employment.

Respondents went on to give especially high ratings to the quality of instruction they received. They also provided favourable ratings to the organization of the program and the quality of tools and equipment used. In comparison with previous APPSO survey results, these program ratings have actually gone up slightly in the last two years. The ratings of the

content of courses—covering the standards being used in their fields, covering the topics most relevant to their fields, and being up-to-date—have also gone up somewhat. The largest majority gave a *very good* or *good* rating to covering standards.

Two-thirds of the survey respondents said the availability of the technical training courses they needed was *very good* or *good*. Likewise, two-thirds said the length of their training was *about right*. However, almost one-third of respondents said the training was *too short*. When asked for suggestions to improve their training, the same percentage of respondents said the training period should be longer. Other suggestions for improvement included more consistency in teachers, more lab time or practical experience, better equipment, and more up-to-date learning materials.

At the time of the survey, three-quarters of the former apprentices surveyed had received their Certificate of Qualification. Of those who did not have their certification yet, half said they needed more work hours and a third either had not written the examination or had been unsuccessful in their attempt. Most respondents, successful or not, said that the knowledge and skills they gained from their in-school training were *very useful* or *somewhat useful* to them in preparing to write the certification exam.

Almost all of the 2011 respondents were *very satisfied* or *satisfied* with their overall workplace training experience. Most also said their in-school technical training was *very related* or *somewhat related* to their workplace experience. For almost all program areas, respondents were virtually unanimous in saying their in-school training was related to their workplace experience.

The labour force participation rate of the former apprentices surveyed in 2011 is very high—as it has been every year since 2005. The employment rate is lower than it was in the years before 2009 (which was when survey results showed the impact of the economic downturn), but it is higher than the B.C. average for a comparable age group.

The unemployment rate also reflects current economic conditions. The past few years have seen the rate climb, as rates across the province did. Unemployment is closely related to local conditions, and there are significant differences in the former apprentices' unemployment rates by region: the Northeast region had the lowest rate, while the Vancouver Island/Coast and North Coast regions had the highest.

For respondents who were working at the time of the survey, the conditions of their employment were good: most had one job only and it was a permanent, full-time position. Over half of those working were still employed with their workplace training employer. Those who had to look for a job after their apprenticeships found employment relatively quickly; the majority within one month. Most respondents said their job was related to their apprenticeship training. Further, they said the knowledge and skills they gained through their training were useful to them in the performance of their jobs. As in previous years, there was a very good correlation between former students' apprenticeship training and their subsequent occupations.

The 2011 APPSO Survey has provided valuable information to the ministries of Advanced Education and Jobs, Innovation and Tourism, the Industry Training Authority, and the institutions that provide technical training. Respondents' consistently high ratings of their in-school and workplace training, and employment rates that are significantly higher than the B.C. average serve to demonstrate that current apprenticeship training is relevant and aligned with labour market needs.

Appendices

Appendix A: Apprenticeship Survey Methodology

Cohort

The survey cohort included all apprenticeship students who *completed the final year of their apprenticeship programs* at a participating B.C. post-secondary institution. The following criteria were used to define the survey cohort: all apprenticeship students who completed the final year of their apprenticeship programs between July 1, 2009 and June 30, 2010 at a B.C. public post-secondary institution or at a B.C. private training institution.

Since apprenticeship students may take different parts of their apprenticeship programs at different institutions, the last institution that the student attended was considered the institution of record and that institution was asked to submit the name in their cohort file. The cohort extract included elements such as name, address, telephone number, program description, gender, birth date, program start date, and completion date.

There were 38 B.C. post-secondary institutions that participated in this project—14 of them were public. These public institutions provided 82 percent of the cohort. The cohort of students from private institutions was provided by the ITA. The following tables list the participating institutions, the number of former apprentices from each who were eligible for the survey, and the number who responded to the survey.

Participating public institutions

Public Institutions	Eligible for Survey	Respondents	Response Rate
BC Institute of Technology	1,498	819	55%
Camosun College	465	279	60%
College of New Caledonia	427	244	57%
College of the Rockies	187	121	65%
Kwantlen Polytechnic University	290	167	58%
North Island College	174	102	59%
Northern Lights College	126	72	57%
Northwest Community College	101	62	61%
Okanagan College	727	362	50%
Selkirk College	133	80	60%
Thompson Rivers University	395	220	56%
University of the Fraser Valley	43	26	60%
Vancouver Community College	463	226	49%
Vancouver Island University	339	171	50%
Public Institutions Total	5,368	2,951	55%

Participating private institutions

Private Institutions	Eligible for Survey	Respondents	Response Rate
BC Floor Covering Joint Conference Society	13	5	38%
BC Wall & Ceiling Association	48	24	50%
Broadband Institute	9	7	78%
Christian Labour Association of Canada	15	9	60%
Discovery Community College	26	9	35%
Electrical Industry Training Institute	63	31	49%
Funeral Service Association of B.C	17	13	76%
Interior Heavy Equipment Operator School Ltd	#	#	100%
Joint Apprentice Refrigeration Trade School	75	47	63%
The Finishing Trades Institute of BC	102	53	52%
Northwest Culinary Academy of Vancouver Inc.	47	27	57%
Operating Engineers Training Centre	30	19	63%
Pacific Vocational College	315	181	57%
Piledrivers, Divers, Bridge, Doc, Loc 2404	19	13	68%
Piping Industry Trade School	127	71	56%
Quadrant Marine Institute	14	8	57%
R.C.A.B.C. Roofing Institute	62	35	56%
Riverside College	10	7	70%
Salvation Army Cascade Culinary Arts School	21	13	62%
Secwepemc Cultural Education Society	8	6	75%
Sheet Metal Workers Training Institute	45	26	58%
Sprott-Shaw Community College	#	#	100%
Trowel Trades Training Association	69	37	54%
VanAsepTraining Society	9	4	44%
Private Institutions Total	1,147	648	56%

Note: Low numbers are masked, to preserve confidentiality.

The cohort extracts were assembled and reviewed for completeness and then passed to the survey contractor for data collection.

Data collection

Field testing of the survey instrument was done January 6 to January 9, 2011, using a sub-sample of the available cohort—84 respondents were surveyed. The data collection contractor noted some issues that could arise during data collection and addressed them in interviewer training. No changes to the survey instrument were recommended.

The data collection contractor undertook a number of steps to contact former students, including:

- For records with multiple phone numbers, calling all numbers to determine the correct number
- Leaving a voice mail and toll-free number for the former students to call at their convenience
- Using a number of directories to trace former students whose phone numbers were missing or incorrect
- Asking for a forwarding number, where possible
- Sending emails with the toll-free number, where possible

The survey was conducted from January 13 to April 16, 2011. The average administration time of the telephone survey was 13.9 minutes. This was the first year that an online survey option was offered, and of the 3,599 survey completions, 672 were done online. The online response rate was 10 percent; the telephone rate was 45 percent—the overall response rate was 55 percent.

The following table shows the disposition of the survey cohort that was submitted for data collection.

Final call dispositions, 2011 Apprenticeship Student Outcomes Survey

Call Result	N	% of Cohort
Telephone Completion	2,927	45%
Online Completion	672	10%
Left Message/Call Again	1,097	17%
Not in Service/Wrong Number	338	5%
Respondent Refusal	321	5%
DA Searching all new leads incorrect	320	5%
DA Searching new leads unconfirmed	190	3%
Soft Appointment	158	2%
No Answer	98	2%
Non-Qualifier	94	1%
Respondent Wants to Do Online	84	1%
Second Respondent Refusal	48	1%
Travel/Moved out of Canada/US	26	0%
Hard Appointment	24	0%
No Phone Number/Incomplete Number	20	0%
Non-Qualifier (Still in Same Program)	19	0%
Travel Within Canada/US	19	0%
Moved/Left Toll-Free Number	17	0%
Incomplete Survey	10	0%
Language Case	9	0%
Problem Communicating with Respondent	9	0%
Business (Not Employed There)	6	0%
Fax/Modem Line	5	0%
Deceased/Serious Illness/Incapable/In Prison/Shelter	4	0%
Total all records	6,515	100%

Analysis and Reporting

BC Stats was responsible for cleaning and validating the data received from the data collection contractor. Based on these data—the responses to the survey questionnaire—the necessary variables were derived for analysis and reporting. Data from the 2011 survey were first released through the web-based Student Outcomes Reporting System (SORS) on June 17, 2011. Apprenticeship SORS provides access to seven years of APPSO Survey data in a variety of formats. The public version of Apprenticeship SORS—available on the student outcomes website under "Search BC Post-Secondary Student Survey Results"—was released at the same time and provides information for the general public in report form. The most recent three years of data are combined to produce reports at the individual trade or program level.

Analysis for this report included frequencies, crosstabs, and comparison of means; in addition, statistical tests were used to determine if the observed differences between groups were statistically significant. A statistically significant result is one that cannot reasonably be explained by chance alone.

Limitations

The former students who were interviewed—55 percent of those eligible for surveying—were those from the cohort who could be located and who agreed to be surveyed. They may not be representative of all former students.

Some of the 24 apprenticeship program areas had relatively small numbers; for these programs, the numbers were too small to permit comparative or in-depth analysis.

Percentages

For consistency and ease of presentation, most percentages in the report text, tables, and charts have been rounded and may not always add to 100.

Unless otherwise noted, each percentage is based on the number of students who gave a valid response to the question—those who refused the question, or said don't know, were not included in the calculation.

Appendix B: Trades Programs Moved from DACSO to APPSO

In 2010, there was a change to the cohort selection criteria that had an impact on a few of the APPSO program areas that are analysed in the report. In 2010, the program areas including cook and welding programs were affected. For the 2011 survey cycle, the cohort selection criteria were expanded somewhat and the resulting cohort moved from the Diploma, Associate Degree, and Certificate Student Outcomes (DACSO) Survey was larger than that of the previous year and included a few former carpentry students, from Residential Construction programs.

From the 2011 Apprenticeship Student Outcomes Survey Cohort Submission Instructions:

> Apprenticeable Programs:
>
> A number of programs listed on the ITA website now have different levels at which students are eligible to write the Certificate of Qualification (C of Q) exam (e.g., Welding, Cook Training, Parts and Warehousing/Partsperson, Planermill Maintenance Technician). Although these programs may not be delivered like typical apprenticeship programs, they are now designated as apprenticeable by the Industry Training Authority (ITA) and must be included in the APPSO cohort.

There were 920 respondents from programs formerly in DACSO; from the apprenticeship program areas of Welder, Culinary Arts, and Carpentry. Note that most of the 2011 program area called Welder and more than half of the Culinary Arts area were made up of respondents from programs previously in DACSO. The result of this cohort change is especially evident in the demographics of the respondents, and in their employment outcomes.

Respondents from the affected program areas

	Program Area	From programs previously in DACSO		From programs already in APPSO		Total program area	
		n	%	n	%	n	%
Respondents	Carpentry	39	9%	391	91%	430	100%
	Culinary Arts	265	65%	140	35%	405	100%
	Welder	616	95%	30	5%	646	100%

The characteristics of these respondents from programs previously in DACSO were somewhat different from traditional apprenticeship students: they were younger on average, more likely to be female and more likely to self-identify as Aboriginal. They tended to give higher ratings: when asked how well their training had helped them develop skills, they were more likely than others to give higher *very well* ratings. They were also more likely to give high ratings (especially *very good*) to aspects of their programs, such as instruction and program organization.

On the other hand, this group was less likely to have achieved certification. Their labour force participation was lower, as was their employment rate. Their unemployment rate (those not working as a percentage of the labour force) was significantly higher than that of other respondents. For those who were employed at the time of the survey, their hourly wage was lower.

The differences in performance measures and outcomes noted above only affected the Carpentry, Culinary Arts, and Welder groups. Within each group, the ratings of those from programs formerly in DACSO are not consistently higher, and in fact, there are only a few cases where the differences in ratings are statistically significant.

Skills development: ratings of *very well* or *well*

	Program Area	From programs previously in DACSO	From programs already in APPSO	Total program area
		%	%	%
Analyse & think critically	Carpentry	89%	82%	83%
	Culinary Arts	79%	85%	81%
	Welder	85%	89%	85%
Read & comprehend	Carpentry*	95%	82%	83%
	Culinary Arts	80%	77%	79%
	Welder	84%	81%	84%
Work with others	Carpentry	92%	82%	83%
	Culinary Arts	87%	88%	87%
	Welder	83%	96%	83%
Resolve issues or problems	Carpentry*	89%	72%	74%
	Culinary Arts	75%	79%	76%
	Welder	79%	88%	79%
Write clearly & concisely	Carpentry	86%	73%	75%
	Culinary Arts	76%	74%	76%
	Welder	83%	87%	83%
Speak effectively	Carpentry	84%	70%	72%
	Culinary Arts	77%	76%	77%
	Welder	79%	83%	79%

* statistically significant differences between the programs previously in DACSO and those that were already in APPSO

Ratings of in-school training: *very good* or *good*

	Program Area	From programs previously in DACSO	From programs already in APPSO	Total program area
		%	%	%
Quality of instruction	Carpentry	95%	86%	87%
	Culinary Arts*	78%	88%	81%
	Welder	89%	93%	89%
Amount of practical experience	Carpentry*	92%	75%	77%
	Culinary Arts	83%	87%	84%
	Welder	91%	90%	91%
Quality of tools & equipment	Carpentry	82%	84%	83%
	Culinary Arts*	87%	78%	84%
	Welder	89%	97%	90%
Organization of program	Carpentry	92%	81%	82%
	Culinary Arts	73%	74%	73%
	Welder	84%	93%	84%

* statistically significant differences between the programs previously in DACSO and those that were already in APPSO

Employment outcomes were also impacted by the addition of respondents who would previously have been surveyed in DACSO, although within groups, the differences were not always pronounced. For example, labour force participation was not too different between those from programs previously in DACSO and the other respondents; except for those in the Welder program area, the labour force participation rates are the same for both groups. The unemployment rates, however, have been affected by the addition of the younger and less experienced respondents.

Employment Outcomes

	Program Area	From programs previously in DACSO	From programs previously in APPSO	Total program area
		%	%	%
Labour force	Carpentry	95%	95%	95%
	Culinary Arts	89%	89%	89%
	Welder	92%	97%	92%
Unemployment	Carpentry*	30%	14%	15%
	Culinary Arts	13%	9%	12%
	Welder	18%	10%	18%
Training-related job	Carpentry*	77%	94%	93%
	Culinary Arts	85%	88%	86%
	Welder*	75%	92%	76%

* statistically significant differences between the programs previously in DACSO and those that were already in APPSO

Appendix C: Apprenticeship Program Areas and Institutions' Programs

Institution names and codes

Code	Institution Name
BCFC	BC Floor Covering Joint Conference Society
BCIT	BC Institute of Technology
BCWCA	BC Wall & Ceiling Association
BROAD	Broadband Institute
CAM	Camosun College
CCAS	Salvation Army Cascade Culinary Arts School
CLAC	Christian Labour Association of Canada
CNC	College of New Caledonia
COTR	College of the Rockies
DCC	Discovery Community College
EITI	Electrical Industry Training Institute
FSABC	Funeral Service Association of B.C
FVAL	University of the Fraser Valley
IHES	Interior Heavy Equipment Operator School Ltd.
JARTS	Joint Apprentice Refrigeration Trade School
JTS	The Finishing Trades Institute of BC
KWN	Kwantlen Polytechnic University
NIC	North Island College
NLC	Northern Lights College
NWCAV	Northwest Culinary Academy of Vancouver Inc.
NWCC	Northwest Community College
OETC	Operating Engineers Training Centre
OKN	Okanagan College
PDBD	Piledrivers, Divers, Bridge, Doc, Loc 2404
PIPE	Piping Industry Trade School
PVC	Pacific Vocational College
QUADR	Quadrant Marine Institute
RCABC	R.C.A.B.C. Roofing Institute
RIVER	Riverside College
SECWE	Secwepemc Cultural Education Society
SEL	Selkirk College
SMWTC	Sheet Metal Workers Training Centre
SSCC	Sprott-Shaw Community College
TRU	Thompson Rivers University
TTTA	Trowel Trades Training Association
VANAS	VanAsep Training Society
VCC	Vancouver Community College
VIU	Vancouver Island University

Program Area / Institution		Institution's Program Name	Respondents
Autobody/Collision & Repair			
	OKN	Apprentice Auto Body	3
		Apprentice Auto Paint/Refinishing	5
		Apprentice Automotive Refinishing Prep Technician	6
	VCC	Auto Collision Repair Apprentice Level 3	29
		Auto Glass Installer Apprentice Level 2	4
		Auto Paint & Refinishing Apprentice Level 1	11
		Auto Refinishing Prep Apprentice Level 1	15
Automotive Mechanics			
	BCIT	Automotive Technician Acura/Honda(AHAP) Apprentice	7
		Automotive Technician Apprentice	32
		Automotive Technician GM (ASEP) Apprentice	19
	CAM	Automotive Service Technician - Apprenticeship Training	10
	CNC	Automotive Mechanics IV	10
	KWN	Apprentice - Automotive Service	9
	NLC	Automotive Service Tech Apprentice Level 4	5
	NWCC	Automotive Apprentice - Level 4	3
	OKN	Apprentice Automotive Service Technician	23
	RIVER	Automotive Service Technician 1 Apprenticeship	7
	VCC	Auto Tech Apprentice Level 4	20
	VIU	Automotive Apprenticeship	17
Carpentry			
	BCIT	Carpentry Apprentice	66
	CAM	Carpenter - Apprenticeship Training	60
	CNC	Carpentry IV	33
	*	CTC Residential Construction Framing Technician	#
	*	Residential Construction Framing Technician	10
	COTR	Carpentry Apprenticeship Level Four Program	22
	DCC	Residential Construction Framing Technician Apprenticeship	9
	KWN	Apprentice - Carpentry	27
	NLC	Carpentry Apprentice Level 4	8
	*	Residential Construction Trades Training	11
	NWCC	Carpentry Apprentice - Level 4	7
	OKN	Apprentice Carpentry	72
	*	Residential Construction	17
	SEL	Apprentice Year 4 - Carpentry	25
	SSCC	Residential Framing Technician Apprenticeship	#
	TRU	Carpentry Apprentice	26
	VIU	Carpentry Apprenticeship	34
Construction Heavy Equipment			
	OETC	Mobile Crane Operator - Lattice Boom Friction Apprenticeship	3

Note: Low numbers are masked, to preserve confidentiality.
*Programs previously in DACSO.

Program Area	Institution		Institution's Program Name	Respondents
Culinary Arts				
	CAM		Professional Cook - Apprenticeship Training	10
		*	Professional Cook Foundation - Level 1	16
		*	Professional Cook Foundation - Level 2	14
	CCAS		Professional Cook 1 Apprenticeship	13
	CNC	*	CTC Culinary Arts	#
		*	Professional Cook I	#
		*	Professional Cook II	13
	COTR	*	Culinary Arts Professional Cook Training Term 3	9
		*	Professional Cook 1	12
			Professional Cooking Level III Apprenticeship	#
	FVAL		Cook Training Certificate	7
	NIC	*	Culinary Arts Program	6
		*	Professional Cook 1 Certificate	8
	NLC		Cook 1/Camp Cook	3
	NWCAV		Professional Cook 1 Apprenticeship	27
	NWCC	*	Professional Cook 1	3
		*	Professional Cook 2	12
			Professional Cook Apprentice - Level 3	3
	OKN		Apprentice Cook	7
		*	Culinary Arts Certificate	15
		*	Culinary Arts Level 1 Dual Credit	9
	SEL		Professional Cook ACE-IT	4
	TRU	*	Culinary Arts	25
	VCC		Baking & Pastry Apprentice Level 3	5
			Cook Foundation	8
		*	Culinary Arts	82
			Culinary Arts - Aboriginal Specialty	#
			Culinary Arts Apprentice Level 3	27
	VIU		Baking Apprenticeship	9
		*	Culinary Arts - Previously Foundation	38
			Culinary Arts Apprenticeship	9
			Culinary Arts Diploma Program	3
Electrician				
	BCIT		Electrical Apprentice	216
	CAM		Electrician - Apprenticeship Training	63
	CNC		Electrical Apprentice IV	29
	COTR		Electrical Apprenticeship Year 4	18
	NIC		Electricity Apprentice	37
	N[illegible]		Electrician Apprenticeship Level 4	10
	NWCC		Electrical Apprentice - Level 4	9
	OKN		Apprentice Electrician	58
	SEL		Apprenticeship Year 4 - Electrical	31
	TRU		Electrical Apprentice	56
	VIU		Electrical/Electronic Technician Apprenticeship	10

Note: Low numbers are masked, to preserve confidentiality.
*Programs previously in DACSO

Program Area / Institution	Institution's Program Name	Respondents
Exterior & Interior Finishing Trades		
BCFC	Floor Covering Installer Apprenticeship	5
BCIT	Heat/Frost Insulation Apprentice	3
BCWCA	Lather (Interior Systems Mechanic) (Wall & Ceiling Installer) Apprenticeship	24
JTS	Drywall Finisher Apprenticeship	5
	Glazier Apprenticeship	18
	Lather (Interior Systems Mechanic) (Wall & Ceiling Installer) Apprenticeship	16
	Painter And Decorator Apprenticeship	14
NIC	Residential Building Maintenance Worker	3
RCABC	Roofer (Roofer, Damp and Waterproofer) Apprenticeship	35
SECWE	Residential Building Maintenance Worker Apprenticeship	6
TTTA	Bricklayer (Mason) Apprenticeship	20
	Concrete Finisher (Cement Mason) Apprenticeship	9
	Tilesetter Apprenticeship	8
Heating, Air Conditioning, Refrigeration		
BCIT	Refrigeration Apprentice	13
JARTS	Refrigeration & Air Conditioning Mechanic (Refrigeration Mechanic) Apprenticeship	47
OKN	Apprentice Domestic/Residential Geothermal Technician	#
Medium/Heavy Duty Mechanics		
BCIT	Commercial Transport Apprentice	25
	Heavy Duty Mechanic Apprentice	10
CNC	Heavy Duty Mechanic IV	20
	Heavy Duty Mechanic/Commercial Transport - 4th Year	6
COTR	Heavy Duty Mechanics Apprenticeship Year Four	15
NLC	Commercial Transport Tech Apprentice Level 4	7
	Heavy Duty Tech Apprentice Level 4	8
OKN	Apprentice Heavy Duty Equipment	9
TRU	Commercial Vehicle Mechanic Apprentice	9
	Heavy Duty Mechanics Apprentice	20
VCC	Diesel Commercial Transport Mechanic Apprentice Level 4	8
	Diesel Heavy Duty Mechanics Apprentice Level 4	15
VIU	Heavy Duty Mechanic Apprenticeship	8
Horticulture & Landscaping		
EITI	Utility Arborist Apprenticeship	15
KWN	Apprentice - Landscape Horticulture	10
	Apprentice - Production Horticulture	6
Industrial Electronics		
BCIT	Industrial Instrumentation Apprentice	16
BROAD	Community Antenna TV Technician Apprenticeship	7

Note: Low numbers are masked, to preserve confidentiality.

Program Area	Institution	Institution's Program Name	Respondents
Industrial Mechanics & Maintenance			
	BCIT	Benchperson Apprentice	8
		Circular Sawfiler Apprentice	#
		Millwright Apprentice	45
		Sawfitting Apprentice	5
	CNC	Millwright IV	38
	COTR	Millwright Apprenticeship Year Four	8
	KWN	Apprentice - Millwright	12
	NIC	Millwright Apprenticeship Technical Training	10
	SEL	Millwright Apprentice Level 4	3
Lineworker			
	EITI	Power Line Technician Apprenticeship	16
Machinist			
	BCIT	Machinist Apprentice	36
	CNC	Machinist IV	#
Marine & Power Sport			
	BCIT	Inboard/Outboard Apprentice	8
		Motorcycle Mechanic Apprentice	#
	QUADR	Marine Service Technician Apprenticeship	8
Mortuary Science & Embalming			
	FSABC	Embalmer and Funeral Director Apprenticeship	10
		Funeral Director Apprenticeship	3
Parts & Warehousing			
	KWN	Apprentice - Partsperson	12
Pipefitter & Sprinkler Fitter			
	BCIT	Gasfitting Apprentice	16
		Steamfitting Apprentice	7
	PIPE	Sprinkler System Installer Apprenticeship	13
		Steamfitter - Pipefitter Apprenticeship	14
	PVC	Domestic/Commercial Gasfitter Apprenticeship	26
		Sprinkler System Installer Apprenticeship	34
Plumbing			
	BCIT	Plumbing Apprentice	84
	CAM	Plumber - Apprenticeship Training	29
	NIC	Plumbing Apprenticeship	8
	NLC	Plumber Apprentice Level 4	5
	OKN	Apprentice Plumbing	37
	PIPE	Plumber Apprenticeship	37
	PVC	Plumber Apprenticeship	121
	TRU	Plumbing Apprentice	28

Note: Low numbers are masked, to preserve confidentiality.

Program Area	Institution		Institution's Program Name	Respondents
Field Equipment (Mining/Drilling/Logging)				
	CLAC		Heavy Equipment Operator Apprenticeship	9
	IHES		Heavy Equipment Operator Apprenticeship	#
	NWCC		Heavy Equipment Operator Technician	3
	OETC		Heavy Equipment Operator Apprenticeship	16
	VANAS		Heavy Equipment Operator Apprenticeship	4
Joinery				
	BCIT		Joinery (Cabinetmaker) Apprentice	31
	OKN		Apprentice Joinery	7
Metal Fabricator (Fitter)				
	BCIT		Boilermaker Apprentice	5
			Ironworker - Reinforcing Apprentice	4
			Ironworker Generalist Apprentice	8
			Steel Fabrication Apprentice	35
	PDBD		Piledriver And Bridgeworker Apprenticeship	13
Sheet Metal Worker				
	BCIT		Sheet Metal Apprentice	24
	CAM		Sheet Metal Worker - Apprenticeship Training	18
	OKN		Apprentice Sheet Metal	13
	SMWTC		Sheet Metal Worker Apprenticeship	26
Welder				
	BCIT		Welding Apprentice	#
		*	Welding Level A	24
		*	Welding Level B	22
		*	Welding Level C Foundation	47
	CAM		Welder - Apprenticeship Training	4
		*	Welding "C" Foundation	29
		*	Welding Level A	10
		*	Welding Level B	16
	CNC	*	CTC Welding	4
		*	CTC Welding / Fitting	11
		*	Welding - Level A	16
		*	Welding - Level B	14
		*	Welding - Level C	33
	COTR	*	Welding A Level	6
			Welding Apprenticeship Level 4	7
		*	Welding B Level	7
		*	Welding C Level	15
	FVAL	*	Welding Level A Certificate	4
		*	Welding Level B Certificate	15

Note: Low numbers are masked, to preserve confidentiality.
*Programs previously in DACSO

Program Area	Institution		Institution's Program Name	Respondents
	KWN	*	Certificate in Welding C (High School ACE-IT)	19
		*	Cit in Welding - Level A	13
		*	Cit in Welding - Level B	25
		*	Welding - Level C	34
	NIC	*	Welding Level A	13
		*	Welding Level B	3
		*	Welding Level C	14
	NLC	*	Welding Level A	#
		*	Welding Level B	8
		*	Welding Level C	6
	NWCC	*	ACEIT Welding	3
		*	Welding C Module	19
	OKN		Apprentice Welding Technician	#
		*	Welding Level A Certificate	11
		*	Welding Level B Certificate	16
		*	Welding Level C	51
	PIPE		Welder Level 'B' Apprenticeship	5
			Welder Level 'C' Apprenticeship	#
	SEL	*	Welding - Level "C"	8
		*	Welding - Level "A"	7
		*	Welding - Level "B"	#
	TRU		Welding Apprentice	3
		*	Welding - Level "A"	11
		*	Welding - Level "B"	17
		*	Welding - Level "C"	25
	VIU	*	Welding - Previously Foundation	42
			Welding Apprenticeship	#

Note: Low numbers are masked, to preserve confidentiality.
*Programs previously in DACSO

Appendix D: Response Rates by Program Area

Apprenticeship Program Area	Eligible for Survey	Respondents	Response Rate
Autobody/Collision & Repair	125	73	58%
Automotive Mechanics	280	162	58%
Carpentry	762	430	56%
Construction Heavy Equipment	5	3	60%
Culinary Arts	830	405	49%
Electrician	924	537	58%
Exterior & Interior Finishing Trades	323	166	51%
Field Equipment (Mining/Drilling/Logging)	55	33	60%
Heating, Air Conditioning, Refrigeration	100	61	61%
Horticulture & Landscaping	55	31	56%
Industrial Electronics	31	23	74%
Industrial Mechanics & Maintenance	216	130	60%
Joinery	67	38	57%
Lineworker	35	16	46%
Machinist	67	38	57%
Marine & Power Sport	31	17	55%
Medium/Heavy Duty Mechanics	283	160	57%
Metal Fabricator (Fitter)	136	65	48%
Mortuary Science & Embalming	17	13	76%
Parts & Warehousing	19	12	63%
Pipefitter & Sprinkler Fitter	186	110	59%
Plumbing	624	349	56%
Sheet Metal Worker	142	81	57%
Welder	1,202	646	54%
TOTAL	6,515	3,599	55%

Appendix E: Respondents' Satisfaction Ratings by Program Area

How satisfied were former students with the education they received from their institution?

Apprenticeship Program Area	Very satisfied	Satisfied	Dissatisfied	Very dissatisfied	Valid responses
Autobody/Collision & Repair	50%	40%	10%	0%	72
Automotive Mechanics	41%	51%	7%	1%	161
Carpentry	50%	47%	3%	1%	429
Construction Heavy Equipment	33%	67%	0%	0%	3
Culinary Arts	40%	52%	7%	1%	401
Electrician	41%	54%	4%	0%	537
Exterior & Interior Finishing Trades	41%	44%	10%	5%	166
Field Equipment (Mining/Drilling/Logging)	47%	47%	6%	0%	32
Heating, Air Conditioning, Refrigeration	36%	48%	13%	3%	61
Horticulture & Landscaping	42%	48%	10%	0%	31
Industrial Electronics	57%	35%	4%	4%	23
Industrial Mechanics & Maintenance	51%	47%	2%	1%	130
Joinery	39%	58%	3%	0%	38
Lineworker	25%	75%	0%	0%	16
Machinist	29%	63%	8%	0%	38
Marine & Power Sport	24%	65%	12%	0%	17
Medium/Heavy Duty Mechanics	36%	53%	9%	3%	160
Metal Fabricator (Fitter)	50%	45%	2%	3%	64
Mortuary Science & Embalming	23%	69%	8%	0%	13
Parts & Warehousing	17%	58%	17%	8%	12
Pipefitter & Sprinkler Fitter	41%	54%	5%	1%	110
Plumbing	46%	45%	8%	1%	348
Sheet Metal Worker	48%	48%	2%	1%	81
Welder	54%	42%	4%	0%	644
Total	45%	48%	5%	1%	3,587

How satisfied were former students with their overall workplace training experience?

Apprenticeship Program Area	Very satisfied	Satisfied	Dissatisfied	Very dissatisfied	Valid responses
Autobody/Collision & Repair	35%	52%	13%	0%	54
Automotive Mechanics	40%	51%	7%	2%	126
Carpentry	37%	55%	6%	2%	322
Construction Heavy Equipment	100%	0%	0%	0%	2
Culinary Arts	42%	52%	5%	2%	291
Electrician	33%	60%	6%	1%	356
Exterior & Interior Finishing Trades	39%	56%	5%	1%	111
Field Equipment (Mining/Drilling/Logging)	33%	56%	11%	0%	18
Heating, Air Conditioning, Refrigeration	36%	58%	4%	2%	45
Horticulture & Landscaping	26%	70%	4%	0%	23
Industrial Electronics	13%	88%	0%	0%	16
Industrial Mechanics & Maintenance	29%	52%	13%	6%	101
Joinery	29%	61%	4%	7%	28
Lineworker	43%	57%	0%	0%	14
Machinist	31%	53%	13%	3%	32
Marine & Power Sport	44%	38%	19%	0%	16
Medium/Heavy Duty Mechanics	31%	61%	8%	0%	118
Metal Fabricator (Fitter)	38%	60%	2%	0%	48
Mortuary Science & Embalming	38%	62%	0%	0%	13
Parts & Warehousing	45%	55%	0%	0%	11
Pipefitter & Sprinkler Fitter	39%	59%	0%	1%	76
Plumbing	33%	57%	8%	2%	263
Sheet Metal Worker	44%	47%	9%	0%	45
Welder	31%	64%	5%	0%	301
Total	35%	57%	6%	2%	2,430

Note: Percentages exclude respondents who said workplace training was *not applicable*.

Appendix F: Ratings of In-School Training by Program Area

How well did in-school training help former students develop skills?

Apprenticeship Program Area	Analyse and think critically	Read and comprehend	Work effectively with others	Resolve issues or problems
Autobody/Collision & Repair	87%	75%	87%	81%
Automotive Mechanics	89%	86%	83%	87%
Carpentry	83%	83%	83%	74%
Construction Heavy Equipment	100%	100%	0%	100%
Culinary Arts	81%	79%	87%	76%
Electrician	80%	82%	76%	74%
Exterior & Interior Finishing Trades	75%	72%	82%	73%
Field Equipment (Mining/Drilling/Logging)	88%	79%	83%	79%
Heating, Air Conditioning, Refrigeration	75%	72%	67%	66%
Horticulture & Landscaping	79%	57%	70%	64%
Industrial Electronics	87%	91%	71%	87%
Industrial Mechanics & Maintenance	85%	83%	80%	77%
Joinery	89%	89%	75%	78%
Lineworker	81%	73%	69%	60%
Machinist	86%	89%	83%	88%
Marine & Power Sport	67%	50%	71%	59%
Medium/Heavy Duty Mechanics	82%	79%	79%	78%
Metal Fabricator (Fitter)	89%	86%	85%	77%
Mortuary Science & Embalming	92%	62%	69%	92%
Parts & Warehousing	73%	50%	73%	67%
Pipefitter & Sprinkler Fitter	87%	83%	84%	77%
Plumbing	79%	80%	73%	72%
Sheet Metal Worker	85%	84%	80%	74%
Welder	85%	84%	83%	79%
Total	83%	81%	81%	76%

Note: The percentages are of those who said *very well* or *well*, out of valid responses to the question, excluding those who said *not applicable*.

How did respondents rate aspects of in-school training?

Apprenticeship Program Area	Quality of instruction	Organization of program	Quality of tools & equipment	Amount of practical experience
Autobody/Collision & Repair	90%	90%	90%	74%
Automotive Mechanics	89%	82%	72%	77%
Carpentry	87%	82%	83%	77%
Construction Heavy Equipment	67%	67%	33%	67%
Culinary Arts	81%	73%	84%	84%
Electrician	83%	78%	66%	50%
Exterior & Interior Finishing Trades	80%	75%	79%	75%
Field Equipment (Mining/Drilling/Logging)	94%	91%	94%	70%
Heating, Air Conditioning, Refrigeration	70%	77%	67%	39%
Horticulture & Landscaping	68%	55%	83%	71%
Industrial Electronics	83%	83%	48%	83%
Industrial Mechanics & Maintenance	87%	87%	70%	60%
Joinery	89%	74%	92%	74%
Lineworker	75%	25%	50%	69%
Machinist	84%	74%	50%	79%
Marine & Power Sport	82%	65%	56%	41%
Medium/Heavy Duty Mechanics	77%	73%	60%	62%
Metal Fabricator (Fitter)	83%	75%	82%	72%
Mortuary Science & Embalming	69%	54%	42%	62%
Parts & Warehousing	67%	33%	56%	27%
Pipefitter & Sprinkler Fitter	82%	80%	72%	50%
Plumbing	83%	78%	76%	53%
Sheet Metal Worker	85%	86%	70%	64%
Welder	89%	84%	90%	91%
Total	84%	79%	77%	70%

Note: Percentages are of respondents who said *very good* or *good* out of valid responses to the question, excluding those who said *not applicable*.

Appendix G: Qualification or Certification by Program Area

Apprenticeship Program Area	% Qualified	Valid responses
Autobody/Collision & Repair	76%	71
Automotive Mechanics	76%	161
Carpentry	81%	427
Construction Heavy Equipment	33%	3
Culinary Arts	61%	379
Electrician	84%	537
Exterior & Interior Finishing Trades	60%	163
Field Equipment (Mining/Drilling/Logging)	60%	30
Heating, Air Conditioning, Refrigeration	75%	61
Horticulture & Landscaping	61%	28
Industrial Electronics	82%	22
Industrial Mechanics & Maintenance	82%	126
Joinery	71%	38
Lineworker	93%	15
Machinist	87%	38
Marine & Power Sport	53%	17
Medium/Heavy Duty Mechanics	86%	160
Metal Fabricator (Fitter)	72%	64
Mortuary Science & Embalming	90%	10
Parts & Warehousing	83%	12
Pipefitter & Sprinkler Fitter	79%	109
Plumbing	81%	345
Sheet Metal Worker	79%	81
Welder	70%	619
Total	75%	3,516

Appendix H: Usefulness of In-School Training when Performing Job, by Program Area

Apprenticeship Program Area	Very useful	Somewhat useful	Not very useful	Not at all useful	Valid responses
Autobody/Collision & Repair	67%	28%	3%	1%	67
Automotive Mechanics	64%	31%	3%	3%	154
Carpentry	62%	35%	3%	1%	344
Construction Heavy Equipment	100%	0%	0%	0%	3
Culinary Arts	62%	30%	4%	4%	318
Electrician	50%	46%	4%	0%	459
Exterior & Interior Finishing Trades	61%	33%	2%	3%	145
Field Equipment (Mining/Drilling/Logging)	38%	33%	8%	21%	24
Heating, Air Conditioning, Refrigeration	63%	33%	3%	0%	60
Horticulture & Landscaping	57%	39%	4%	0%	28
Industrial Electronics	83%	17%	0%	0%	23
Industrial Mechanics & Maintenance	61%	36%	2%	1%	126
Joinery	55%	42%	0%	3%	33
Lineworker	81%	19%	0%	0%	16
Machinist	47%	50%	0%	3%	36
Marine & Power Sport	80%	13%	0%	7%	15
Medium/Heavy Duty Mechanics	58%	37%	4%	1%	156
Metal Fabricator (Fitter)	67%	29%	4%	0%	55
Mortuary Science & Embalming	85%	15%	0%	0%	13
Parts & Warehousing	18%	64%	18%	0%	11
Pipefitter & Sprinkler Fitter	58%	36%	4%	2%	98
Plumbing	58%	38%	2%	2%	304
Sheet Metal Worker	53%	40%	4%	3%	70
Welder	54%	32%	5%	9%	483
Total	58%	35%	3%	3%	3,041

Note: Percentages above are based on employed respondents.

Appendix I: Common Occupations by Program Area

Apprenticeship Program Area Occupation Category	Number in Occupation	Percent in Occupation
Autobody/Collision & Repair		
Motor Vehicle Mechanics	61	91%
Automotive Mechanics		
Motor Vehicle Mechanics	136	88%
Machinery & Transportation Equipment Mechanics	3	2%
Carpentry		
Carpenters & Cabinetmakers	249	72%
Contractors & Supervisors, Trades & Related	49	14%
Managers in Construction & Transportation	12	3%
Heavy Equipment Operators	5	1%
Trades Helpers & Labourers	5	1%
Unclassified Occupations	5	1%
Labourers in Processing, Manufacturing & Utilities	3	1%
Motor Vehicle & Transit Drivers	3	1%
Other Technical Inspectors & Regulatory Officers	3	1%
Construction Heavy Equipment		
Crane Operators, Drillers, & Blasters	3	100%
Culinary Arts		
Chefs & Cooks	245	77%
Butchers & Bakers	18	6%
Food Counter Attendants & Kitchen Helpers	16	5%
Retail Salespersons & Sales Clerks	6	2%
Electrician		
Electrical Trades & Telecommunications	392	85%
Contractors & Supervisors, Trades & Related	47	10%
Unclassified Occupations	4	1%
Machinery & Transportation Equipment Mechanics	3	1%
Occupations in Electronics & Electrical Engineering	3	1%
Exterior & Interior Finishing Trades		
Masonry & Plastering Trades	56	39%
Other Construction Trades	51	35%
Contractors & Supervisors, Trades & Related	16	11%
Carpenters & Cabinetmakers	6	4%
Trades Helpers & Labourers	3	2%
Heating, Air Conditioning, Refrigeration		
Machinery & Transportation Equipment Mechanics	57	95%

Note: Occupations with fewer than three respondents are not shown; therefore, most program areas do not add to 100 percent.
Occupation categories are the 3-digit NOC.

Apprenticeship Program Area / Occupation Category	Number in Occupation	Percent in Occupation
Medium/Heavy Duty Mechanics		
Machinery & Transportation Equipment Mechanics	98	63%
Motor Vehicle Mechanics	52	33%
Contractors & Supervisors, Trades & Related	3	2%
Horticulture & Landscaping		
Contractors & Supervisors in Agriculture	19	68%
Agriculture & Horticulture Workers	3	11%
Industrial Electronics		
Occupations in Electronics & Electrical Engineering	15	65%
Electrical Trades & Telecommunications	7	30%
Industrial Mechanics & Maintenance		
Machinery & Transportation Equipment Mechanics	100	79%
Other Trades, Commercial Divers, & Related	14	11%
Lineworker		
Electrical Trades & Telecommunications	15	94%
Machinist		
Machinists & Related Occupations	30	83%
Machinery & Transportation Equipment Mechanics	3	8%
Marine & Power Sport		
Other Mechanics	8	53%
Other Trades, Commercial Divers, & Related	3	20%
Mortuary Science & Embalming		
Technical Occupations in Personal Service	13	100%
Parts & Warehousing		
Recording, Scheduling & Distributing Occupations	11	100%
Pipefitter & Sprinkler Fitter		
Plumbers, Pipefitters, & Gas Fitters	74	76%
Contractors & Supervisors, Trades & Related	7	7%
Machinery & Transportation Equipment Mechanics	5	5%
Other Mechanics	3	3%
Plumbing		
Plumbers, Pipefitters, & Gas Fitters	250	82%
Contractors & Supervisors, Trades & Related	36	12%
Machinery & Transportation Equipment Mechanics	4	1%
Field Equipment (Mining/Drilling/Logging)		
Heavy Equipment Operators	7	28%
Trades Helpers & Labourers	3	12%

Note: Occupations with fewer than three respondents are not shown; therefore, most program areas do not add to 100 percent. Occupation categories are the 3-digit NOC.

Apprenticeship Program Area / Occupation Category	Number in Occupation	Percent in Occupation
Joinery		
Carpenters & Cabinetmakers	27	82%
Contractors & Supervisors, Trades & Related	3	9%
Metal Fabricator (Fitter)		
Metal Forming, Shaping, & Erecting Occupations	44	80%
Heavy Equipment Operators	6	11%
Contractors & Supervisors, Trades & Related	4	7%
Sheet Metal Worker		
Metal Forming, Shaping, & Erecting Occupations	53	76%
Contractors & Supervisors, Trades & Related	6	9%
Machinery & Transportation Equipment Mechanics	3	4%
Welder		
Metal Forming, Shaping, & Erecting Occupations	321	66%
Machinery & Transportation Equipment Mechanics	28	6%
Labourers in Processing, Manufacturing & Utilities	22	5%
Trades Helpers & Labourers	13	3%
Longshore Workers & Material Handlers	10	2%
Contractors & Supervisors, Trades & Related	6	1%
Primary Production Labourers	5	1%
Carpenters & Cabinetmakers	4	1%
Logging & Forestry Workers	4	1%
Motor Vehicle & Transit Drivers	4	1%
Unclassified Occupations	4	1%
Contractors & Supervisors in Agriculture	3	1%
Food Counter Attendants & Kitchen Helpers	3	1%
Mechanical, Electrical, & Electronics Assembler	3	1%
Motor Vehicle Mechanics	3	1%
Plumbers, Pipefitters, & Gas Fitters	3	1%

Note: Occupations with fewer than three respondents are not shown; therefore, most program areas do not add to 100 percent. Occupation categories are the 3-digit NOC.

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